11th Grade Lesson Plan Packet

4/6/2020-4/10/2020

Remote Learning Packet

NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.

April 6 - April 10, 2020
Course: 11 Art
Teacher(s): Ms. Frank clare.frank@greatheartsirving.org

Weekly Plan:

Monday, April 6
☐ Collect a variety of organic objects from outdoors
☐ Sketchbook entry: inventory of collection

Tuesday, April 7
☐ Read over the information and take notes about topographical mark-making
☐ Observational drawing of one of the collected objects, employing shading, cross-contour linework, and topographical mark-making

Wednesday, April 8
☐ Observational drawing of three of the collected objects, employing shading, cross-contour linework, and topographical mark-making to show dimensionality and texture

Thursday, April 9
☐ Using a piece of paper (full or half) as a picture plane, arrange your collected objects to demonstrate principles of design. Record each of your layouts as designs in your sketchbook.

Friday, April 10
☐ No School!

Statement of Academic Honesty

I affirm that the work completed from the packet is mine and that I completed it independently.

I affirm that, to the best of my knowledge, my child completed this work independently

_____
Student Signature

_____
Parent Signature

For all assignments in art this week use a pencil and your sketchbook. If you don't have your sketchbook use plain or lined paper instead. Remember to write your name, grade, and the date on all pages.

Monday, April 6

1. Your primary art assignment today is to collect a variety of organic objects from outdoors, possibly from your yard or the grounds of your apartment complex, or from a green space near where you live - take a walk! Collect 6-10 items: twigs, seed pods, nuts, dried leaves (go easy on the leaves).

(Examples: *a broken pecan shell, a large acorn cap from a burr oak, a partial hydrangea flower which has dried and skeletized, a gumball seed ball, the opened seed capsules from a crepe myrtle tree, a pine cone, a chunk of bark from a pine tree, a weathered twig with buds and leaf scars….)*

2. When you get back inside make a dated sketchbook entry in which you list the items you collected.

Tuesday, April 7

1. Read over the information about topographical mark-making, which is a method for representing surface texture, and write brief notes explaining the method. Notice that topographical mark-making is different from topographical linework, which is specifically used to show elevation levels. See **page 1** of the Supplemental Materials.

2. Select one of the organic objects you collected yesterday, and draw it at a 1:1 scale or larger, employing shading, cross-contour linework, and topographical mark-making to show its texture and dimensionality.
   - Lightly sketch the object, working from general to specific to show the basic shapes, contours and line qualities.
   - Next lightly sketch in major features, followed by other details.
   - Use shading to round the forms, implying the dimensionality and responding to contours.
   - Enhance with cross-contour linework, altering the direction of the lines to show surfaces swelling, caving inward, or curving away. Use a varied weight of line to create emphasis and enhance dimensionality.
   - Add topographical mark-making to show more about the texture of the object. You will be using mark-making patterns. Vary your types of marks and their density.

Wednesday, April 8

1. Make observational drawings of two or three of the collected objects, employing shading, cross-contour linework, and topographical mark-making to show dimensionality and texture. Use the steps from Tuesday's drawing assignment to guide you through the process.

Thursday, April 9

1. Take a piece of plain paper to use as a picture plane. Arrange your collected objects on it to demonstrate two of the principles of design listed below. Consider the negative space in your arrangement. If it would improve your design, fold the paper. Once you have determined your arrangement, draw a composition based on it in your sketchbook, simplifying the forms.
  - The arrangement of items on the paper will be your tableau, and the paper is your picture plane.
  - Remember to begin your drawing by drawing the picture plane, using the same proportions as in your tableau.
  - Sketch the layout, attentive to the shapes, placement and proportion and to the negative shapes.
  - Simplify the forms of the still life items - you do not need to draw them naturalistically.
  - Add value through shading.
  - Write the name of the demonstrated principles of design underneath your drawing.

Principles of Design to Demonstrate in Drawings:

Illusion of Movement
Repetition
Emphasis
Contrast
Anomaly
Visual Grouping
Gravity
Asymmetrical Balance (not using gravity)
Approximate Symmetry (based on symmetry but isn't fully symmetrical)

*See **page 2** of the Supplemental Materials for information about Principles of Design*
You may also look up information from your vocabulary handouts or the dictionary.

Topographical Mark-Making - A method of drawing for representing texture by using patterns and systems of marks, lines and dots. Topographical mark-making is different from topographical linework, which is specifically used to show elevation levels. It may be used in map-making to symbolize that an area is swampy, grassy, or forested, or to show the watery currents of the river. Topographical mark-making can also be used in studio drawing to show specific textures of a subject. Imagine, for example, the kinds of marks you might see symbolizing hills in battle maps from the American Revolution, and then imagine applying those marks to the wrinkles on the knuckles of your hand.
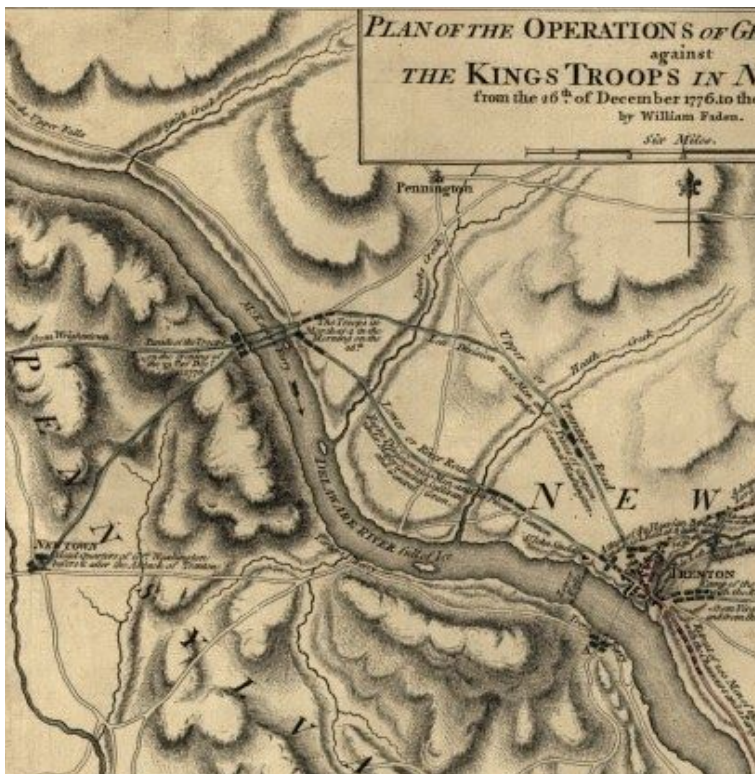
Above left: *Plan of the Operations of General Washington against the King's Troops in New Jersey*; **Above right**, *A Sketch of SCHHALLIEN, With Part of the HILLS, and other Places adjacent*, from the National Library of Scotland Map Library. Compare to topographical lines, **below**:
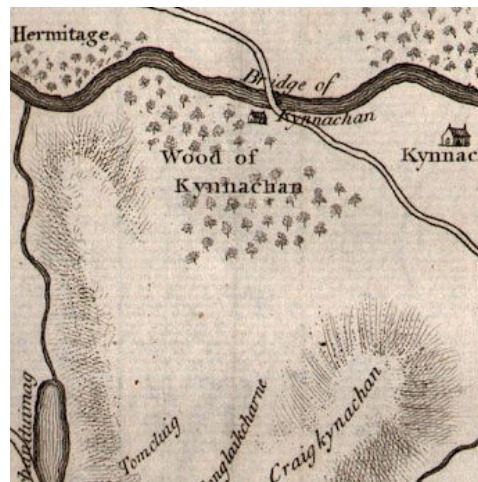
Principles of Design - Principles of design are the means by which artists organize and integrate the visual elements into a unified arrangement. These include unity, harmony, variety, contrast, emphasis, proportion, repetition, rhythm, movement, balance, weight, gravity, visual grouping, and economy.

Balance - Balance is the concept of visual equilibrium, and relates to our physical sense of balance. It is a reconciliation of opposing forces in a composition that results in visual stability. Balance can be achieved through symmetrical or asymmetrical arrangement, and by the distribution of weight.

Symmetrical balance may employ bilateral symmetry or radial symmetry; **asymmetrical balance** involves the distribution of visual weight throughout a composition without using symmetry.

Examples: In Asymmetrical vs. Symmetrical Balance by Hikari Suita. notice that the asymmetrical design incorporates movement, and the symmetrical design uses radial symmetry.

Weight is the ability of an area or art element within a composition to attract attention to itself. The more an element attracts the eye, the greater its visual weight. Visual weight is often created though use of value contrast, color intensity or contrast, size, complexity, proximity (closeness to other shapes), or placement within a picture plane. When you place objects with more visual weight low in the picture plane you are using **Gravity**.

- o Color: fire-red red will usually attract more attention than baby blue
- o Size: A large sphere will usually attract more attention than a small sphere
- o Proximity: Two similar objects next to each other will usually attract more attention
- o Placement: A large sphere placed high in the picture plane will usually have more weight than a sphere placed on ground level.

Emphasis – an aspect of the organizing principle of dominance; with emphasis, certain visual elements are given greater importance than others within a composition. When one form is emphasized, your eye is drawn to it as a focus point.

Movement / the Illusion of Movement – eye travel directed by visual pathways in a work of art; you can guide movement by direction, the placement of points of emphasis, the use of rhythm, and other means.

Visual Grouping – placing similar forms or elements in the same area within a composition to give order.

Example: The design at right demonstrates visual grouping, gravity, implied movement, anomaly, and emphasis. Consider the factors that give the red circle mcore visual weight than any of the blue circles.
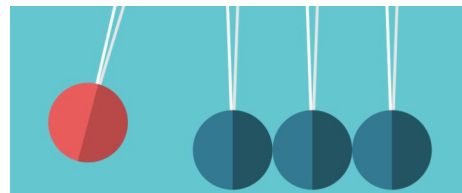
Remote Learning Packet

NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.

April 6-10, 2020
Course: Calculus I
Teacher(s): Mr. Simmons

Weekly Plan:

Monday, April 6
☐ Handout 4.3.I answer key

Tuesday, April 7
☐ Handout 4.3.II

Wednesday, April 8
☐ Handout 4.3.II answer key

Thursday, April 9
☐ Important Derivative Theorems

Friday, April 10
☐ No School!

Statement of Academic Honesty

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Monday, April 6

1. Check your work on handout 4.3.I with my answer key.

As you struggle (yes, you are supposed to be struggling with these worksheets - math is hard creative work), remember always to rely on the rigorous definitions found in your vocabulary packet. As you interpret in what ways the variables y, y', and y'' interact, these definitions will be fundamental.

I am still so sorry that we can't all be working on these problems together. It is not ideal for you not to be able to raise your hand and ask questions as you work, but have fortitude, and take this time to work on your ability to solve problems independently. In part, that means not giving up when confused, but trying to resolve your confusion by looking at, e.g., your vocabulary list or your notes.

Tuesday, April 7

1. Attempt to complete handout 4.3.II.

Wednesday, April 8

1. Check your answers to handout 4.3.II with my answer key.

Thursday, April 9

In attempting to complete the preceding worksheets, your work has been to identify in what ways the variable y, y', and y'' relate to each other. This is hard work. In doing it, you should have noticed some patterns, for example, that whenever y'=0, y has a local extremum. Today's worksheet lists the most important of these results. Your work is to prove those results. Don't expect to prove them all today, but put some real effort into proving them rigorously. Remember that to prove a theorem, you need to suppose the hypothesis and try to derive the consequent. Good luck!

1. Attempt to prove the theorems listed on the "Important Derivative Theorems" handout. You don't have to go in order.

Worksheet 4.3.1 – Answer Key

Calculus I
Mr. Simmons

1. Using the first and second derivatives, sketch a graph for $y = x^2 - 4x + 10$.

   Solution. The graphs of y' and y'' let us sketch a graph of y by showing us the local extrema, inflection points, and concavity of y. As you can see, there are no inflection points, and since y'' is always positive, y is always concave up. There is also a y-intercept of $(0)^2 - 4(0) + 10 = 10$.
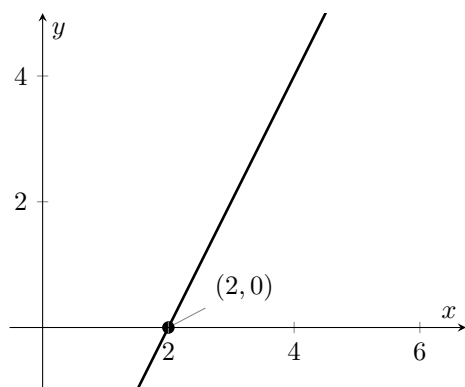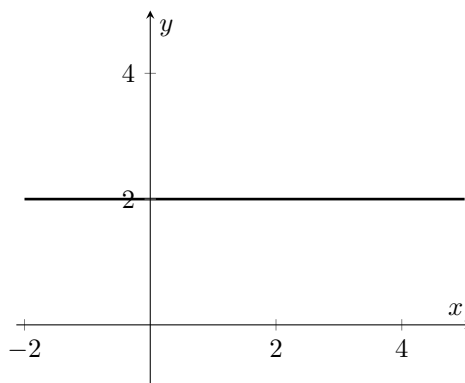

Fig. 1: $y' = 2x - 4$

Fig. 2: $y'' = 2$
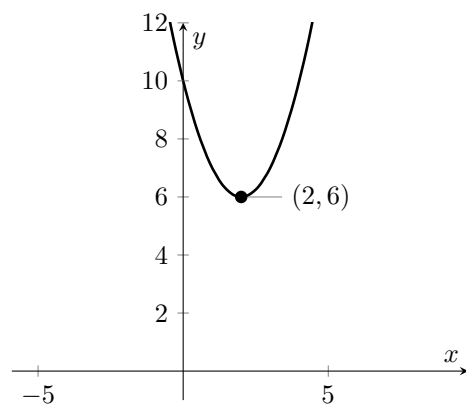
Fig. 3: $y = x^2 - 4x + 10$

2. Using the first and second derivatives, sketch a graph for $y = 3x^3 - 4x^2 - 2$.

Solution. The graphs of y' and y'' let us sketch a graph of y by showing us the local extrema, inflection points, and concavity of y. There is a y-intercept of -2.

Fig. 4: $y' = 9x^2 - 8x$

Fig. 5: $y'' = 18x - 8$
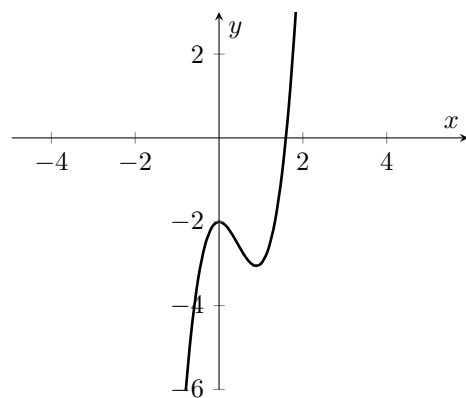
Fig. 6: $y = 3x^3 - 4x^2 - 2$

3. Using the first and second derivatives, sketch a graph for $y = x^4 - 4x^3 + 1$.

   Solution. Note that y has a y-intercept of 1.
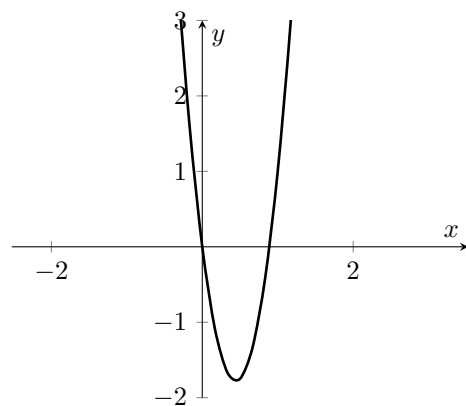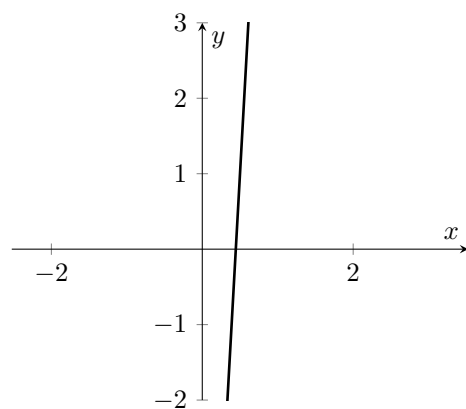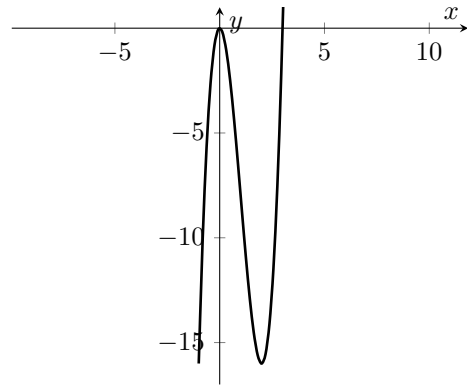
Fig. 7: $y' = 4x^3 - 12x^2$
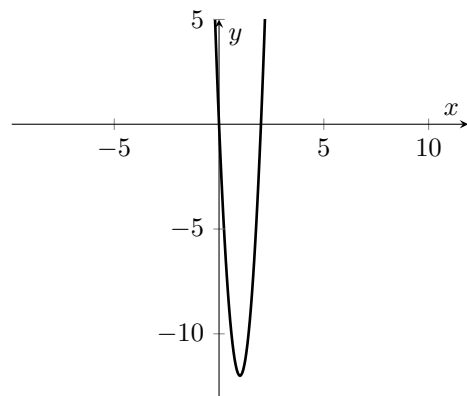
Fig. 8: $y'' = 12x^2 - 24x$
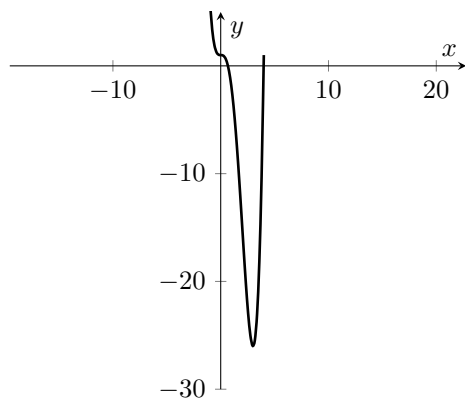
Fig. 9: $y = x^4 - 4x^3 + 1$

4. Using the first and second derivatives, sketch a graph for $y = \sin^2(x) + 1$.

   Solution. The y-intercept here is 1.
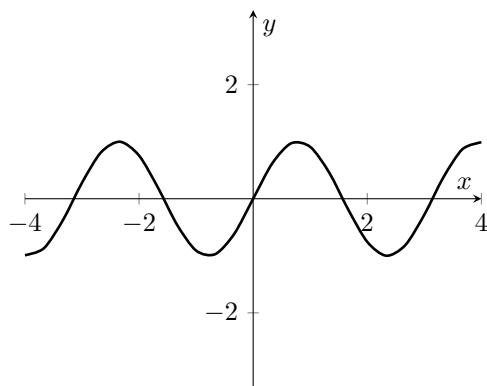
Fig. 10: $y' = 2\sin(x)\cos(x)$
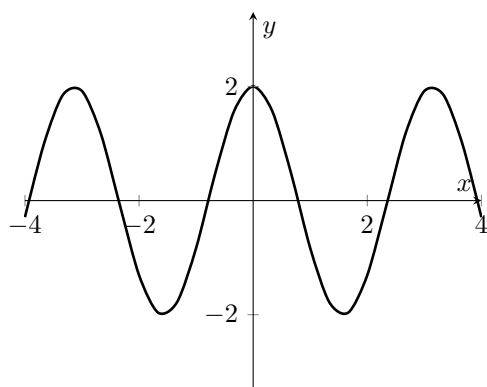
Fig. 11: $y'' = 2\cos^2(x) - 2\sin^2(x)$
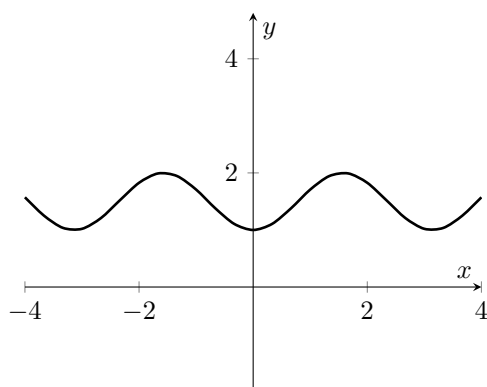
Fig. 12: $y = \sin^2(x) + 1$

Worksheet 4.3.II

Calculus I
Mr. Simmons

1. (a) Consider the function $y = x^3$. Determine y'' and explain what this means.
   (b) Consider the function $y = x^{\frac{1}{3}}$. Determine y'' and explain what this means.
   (c) Consider the function $y = x^4 + 3$. Determine y'' and explain what this means.

2. Use calculus methods to graph $y = x^3 - 3x + 3$ as completely as you can.

3. The first derivative of a function is $y' = x^2 - x - 6$. Use this derivative and the second derivative of the function to graph y as completely as you can.

Worksheet 4.3.II – Answer Key

Calculus I
Mr. Simmons

1. (a) Consider the function $y = x^3$. Determine y'' and explain what this means.

    Solution. We can differentiate $y = x^3$ twice to get

    $$y' = 3x^2$$
    $$y'' = 6x.$$

    What this means is that, since y'' is a positively sloped line with a root of 0, y will be concave down on $(-\infty, 0)$ and concave up on $(0, \infty)$, having an inflection point at $(0, 0)$.

    (b) Consider the function $y = x^{\frac{1}{3}}$. Determine y'' and explain what this means.

    Solution. We can differentiate $y = x^{\frac{1}{3}}$ twice to get

    $$y' = \frac{1}{3x^{\frac{2}{3}}}$$
    $$y'' = -\frac{2}{9x^{\frac{5}{3}}}.$$

    We don't need to graph y'' precisely to know at least a few things about it. We know that if x is positive, y'' will be negative, if x is negative y'' will be positive, as x approaches 0 from the right, y'' approaches $-\infty$, and as x approaches 0 from the left, y'' approaches ∞. (To visualize these limits, try plugging in values for x closer and closer to 0.) What this means is that y will be concave up on $(-\infty, 0)$ and concave down on $(0, \infty)$.

    (c) Consider the function $y = x^4 + 3$. Determine y'' and explain what this means.

    Solution. We can differentiate $y = x^4 + 3$ twice to get

    $$y' = 4x^3$$
    $$y'' = 12x^2.$$

    What this means is that, since y'' is a positive parabola with its vetex at the origin, y will be concave up always, except at $x = 0$, where it has no concavity (but only for an instant).

2. Use calculus methods to graph $y = x^3 - 3x + 3$ as completely as you can.

    Solution. To graph y completely, we want to find all extrema and inflection points. First we find y' and y'':

    $$y' = 3x^2 - 3$$
    $$y'' = 6x.$$

1

This tells us that y has extrema at $x = \pm 1$ (the roots of y') and an inflection point at $x = 0$ (the root of y''), being concave down when $x < 0$ and concave up when $x > 0$. Plugging in $x = 1, -1, 0$, we get $y = 1, 5, 3$, respectively, telling us that y has extrema at $(1, 1)$ and $(-1, 5)$, and an inflection point at $(0, 3)$. Remembering the concavity just stated, we get the following graph:
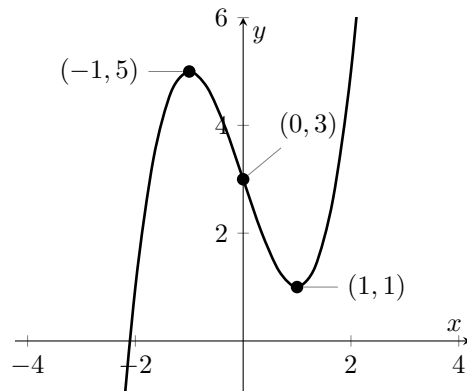
Fig. 1: $y = x^3 - 3x + 3$

3. The first derivative of a function is $y' = x^2 - x - 6$. Use this derivative and the second derivative of the function to graph y as completely as you can.

   Solution. To graph y completely, we want to find all extrema and inflection points. Using $y' = x^2 - x - 6$, we find
   $$y'' = 2x - 1.$$
   This tells us that y has extrema at $x = 3, -2$ (the roots of y') and an inflection point at $x = \frac{1}{2}$ (the root of y''), being concave down when $x < \frac{1}{2}$ and concave up when $x > \frac{1}{2}$. Knowing the concavity tells us that the extremum at $x = 3$ is a minimum, and that the extremum at $x = -2$ is a maximum. And let's assume that y has a y-intercept of 0. So:
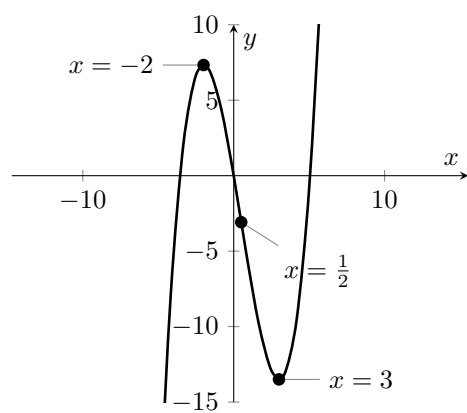
Fig. 2: y

Worksheet – Important Derivative Theorems

Calculus I
Mr. Simmons

Several important results emerge while studying the relationships between a function's extrema, shape, and its derivatives. Among these results we have:

1. If a local extremum occurs at an interior point, $x = c$, and $f'(c)$ exists, then $f'(c) = 0$.

2. If $f'(x) \geq 0$ for every $x \in (a, b)$, then $f(x)$ is increasing on the interval $[a, b]$.

3. If $f'(x) \leq 0$ for every $x \in (a, b)$, then $f(x)$ is decreasing on the interval $[a, b]$.

4. If $f'(x)$ changes sign on either side of the point $x = c$, then a local extremum occurs at $x = c$.

5. If $f''(c) > 0$, then $f(x)$ is concave up at $x = c$.

6. If $f''(c) < 0$, then $f(x)$ is concave down at $x = c$.

7. If $f'(c) = 0$ and $f''(c) > 0$, then $f(x)$ has a local minimum at $x = c$.

8. If $f'(c) = 0$ and $f''(c) < 0$, then $f(x)$ has a local maximum at $x = c$.

Remote Learning Packet

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April 6-10, 2020

Course: Drama

Teacher(s): Mrs. Jimenez (margaret.cousino@greatheartsirving.org)

Weekly Plan:

Monday, April 6
- ☐ Practice lines for 20 minutes
- ☐ Work on character development

Tuesday, April 7
- ☐ Practice lines for 20 minutes
- ☐ Work on character development

Wednesday, April 8
- ☐ Practice lines for 20 minutes
- ☐ Work on character development

Thursday, April 9
- ☐ Practice lines for 20 minutes
- ☐ Work on character development

Friday, April 10
- ☐ No School!

Statement of Academic Honesty

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_____
Student Signature

_____
Parent Signature

Monday, April 6
1. Practice lines for 20 minutes
2. Work on character development sheet

Line memorizing strategies:
- Recite your lines out loud. Practice them like you will say them on stage – projecting, appropriate speed and emotion, etc. Ask yourself why your character is saying what he/she says and that will help you interpret how to say the line.
- Run your lines with a friend or family member. They should read the lines of the other characters in your scenes while you practice your lines from memory.
- Practice your lines in front of a mirror—the bigger the better! Watch yourself—your facial expressions, how you move, stand, etc.—to be aware of how you look while saying your lines.
- Record yourself saying your lines and listen to the audio (even better if you record your cues!)
- Write out your lines by hand (especially if you have a long speech, it is helpful to get it into your memory through writing it out multiple times).
- KNOW YOUR CUES! What line or action comes before you speak?
- Run through the parts of the scenes in which you do not speak—what is your character doing during those parts of the play?
- After spending a period of time going over your lines, take a walk or a nap 😊
- REMEMBER: Consistent practice is the key to success!

ALL LINES MUST BE MEMORIZED BY THE END OF APRIL! Pace yourself accordingly.

Tuesday, April 7

1. Practice lines for 20 minutes
2. Work on character development sheet

Wednesday, April 8

1. Practice lines for 20 minutes
2. Work on character development sheet

Thursday, April 9

1. Practice lines for 20 minutes
2. Work on character development sheet

Drama Weekly Line Memorization

Name: Week: 4/6-4/12

Day:	Minutes practiced:
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Sunday	

Minimum time: 20 mins/day, 5 days/week

I verify that this is a true and accurate account of the time I have spent memorizing my lines this past week.

Signature: **Date:**

Name:
Drama Spring 2020
Mrs. Jimenez
April 6-10, 2020

Twelfth Night Character Development

*Use the script to create a text-based interpretation of your character. Think about **who** your character is and **what** he/she wants. **Write in first person.***

Monday

Character	
Age (approximately)	
Relatives in play (if any)	
Friends	
Enemies	
Social class	

Tuesday

Describe your personality	
What is your overall objective in the play? (The goal/end you hope to achieve)	

What motivates you? *Positive or negative motivations*	

Wednesday

What are your particular **objectives**? How does that direct your **actions** in each scene? *Go through every scene you are in; list the act/scene number and what your objective is in each and how that guides your actions*	**Objectives**	**Actions**

Thursday

How do you respond to the successes or setbacks to your objectives? *Describe specific instances.*	

How do you develop throughout the play? What are you like at the beginning and at the end? What are the turning points of your character? *Be specific*	

Remote Learning Packet

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April 6-10, 2020

Course: 11 Greek

Teacher(s): Miss Salinas annie.salinas@greatheartsirving.org

Weekly Plan:

Monday, April 6

☐ Greek visual dictionary: verbs, α-

☐ Read Ch. 8β grammar notes on πας, πασα, παν on pg. 146-147 of your textbook

Tuesday, April 7

☐ Greek visual dictionary: verbs, β- through γ-

☐ Workbook Exercise 8η, included in this packet

Wednesday, April 8

☐ Greek visual dictionary: verbs, δ- through επα-

☐ Workbook Exercise 8θ, included in this packet

Thursday, April 9

☐ Greek visual dictionary: verbs, επο- through εχ-

☐ Translate workbook Exercise 8η

Friday, April 10

☐ No School!

Statement of Academic Honesty

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Greetings, Greeklings! This week we're continuing to work on our visual dictionaries. As I was looking at the list of verbs, I realized that assigning all 100+ verbs to translate and illustrate was not exactly going to fit into our 30 minute-per-day guidelines, so we're only doing the verbs beginning with α-ε this week. That comes out to about eleven words per day. Have fun with the illustrations for these! I anticipate many a stick figure in our immediate future. Except for ἀκουω...I can't picture how to get a stick figure with ears. Going to have to change it up on that one. I'm looking forward to seeing what y'all come up with!

Monday, April 6

Using the verbs list at the end of this packet and the pages you are directed to in your workbook, translate today's verbs. Then, on a separate sheet of paper, illustrate them as you did your nouns last week.

Read Chapter 8β grammar section 4 on pg. 146-147 of your textbook, entitled "1st/3rd Declension Adjective: πας, πασα, παν, all; every; whole". Then complete the worksheet for Monday.

Tuesday, April 7

Same as yesterday re: the visual dictionary: tackle the Tuesday verbs.

Using your memory and aided by your chart from yesterday, complete workbook Exercise 8η, which is reproduced for you later in this packet for ease of turning in later.

Wednesday, April 8

Today's verbs are δ- through the first part of ε-. Have at it!

Re-read the explanation on the uses and translation of πας, πασα, παν on page 147 of your textbook. Complete workbook Exercise 8θ, which is included for you (and me) later in the packet.

Thursday, April 9

Our final illustrations of the week are the remainder of the ε- verbs. Good luck!

Keeping in mind the explanation on uses and translation on pg. 147 of your textbook, translate each of the phrases that you completed with the proper adjective on Tuesday for Exercise 8η.

Monday

After you read pages 146-147 in your textbook, answer these questions and practice by filling in the chart.

1. What does "πας, πασα, παν" mean?

2. What part of speech is this word?

Look right above the chart on pg. 146.
3. What is the stem for the masculine?
4. What is the stem for the feminine?
5. What is the stem for the neuter?

Look at the initial description and the chart on pg. 146.
6. Which declension's endings does the masculine use?
7. Which declension's endings does the feminine use?
8. Which declension's endings does the neuter use?

Use your memory or the description at the top of page 147 for this one.
9. Why does παντ-ς turn into πᾶσ in the nom. masc. sg? (Hint: τ is a dental consonant…)

Now, try it!

	sg		
	m	**f**	**n**
nom	πας	πασα	παν
gen			
dat			παντι
acc		πασαν	

	pl		
	m	**f**	**n**
nom	παντες		
gen			παντων
dat			
acc			

Exercise 8η

Complete the following phrases with the correct form of πᾶς, πᾶσα, πᾶν, and then translate the phrase into English on the line below. (Exercise 8θ will make use of the blanks that precede the numbered item):

____ 1. _____ τὴν θάλατταν

____ 2. τοῦ _____ ἔργου

____ 3. _____ οἱ ἄνδρες

____ 4. _____ γυνή

____ 5. _____ τὰ ἄροτρα

____ 6. _____ τὰς γυναῖκας

____ 7. _____ ἔργον

____ 8. _____ τῶν ἀνδρῶν

____ 9. _____ ταῖς μητράσιν

____ 10. τῆς _____ γυναικὸς

____ 11. _____ τοὺς πατέρας

____ 12. _____ τῶν παρθένων

____ 13. τὸ _____ ἄστυ

____ 14. _____ αἱ μητέρες

____ 15. τὸν _____ οἶκον

____ 16. _____ τῷ ἔργῳ

____ 17. _____ ὁ πόνος

____ 18. _____ τοῖς ἀνδράσιν

____ 19. _____ θυγατρί

____ 20. _____ ἄνθρωπος

Exercise 8θ

In the blanks to the left of the items in the previous exercise, write an A if the adjective is being used in the attributive position and a P if the adjective is being used in the predicate position. If there is no definite article, do not write an A or a P.

Comprehensive vocab list: verbs, Chapters 1-9 – α- through ε-

Translate as many of these as you can from memory. When you've done all you can remember, you will find pgs. 39-42 and 81-85 of your workbook to be an excellent resource.

Note: for contract verbs, I have first written the un-contracted form and then, in parentheses, the contracted form you'll see in the texts.

Second note: a few of these verbs are from Ch 9, and are thus new to us. As stated above, I **highly** recommend using the vocab lists on pages 39-42 and 81-85 of your workbook to help you.

Monday

ἀγω
αἰρεω (αἱρῶ)
αἰρω
ἀκουω
ἀναβαινω
ἀπειμι
ἀποφευγω
ἀποκρινομαι
ἀποκτεινω
ἀφικνεομαι (ἀφικνοῦμαι)
αὐξανω

Tuesday

βαδιζω
βαινω
βαλλω
βασιλευω
βλεπω
βοαω (βοῶ)
βοηθεω (βοηθῶ)
βουλομαι
γιγνομαι
γιγνεται (3rd. sg.)
γιγνωσκω

Wednesday

δεχομαι
διαλεγομαι
διωκω
ἐγειρω
ἐθελω
εἰμι
εἰσαγω
ἐκβαινω
ἐκφευγω
ἐλαυνω
ἐλθε! (imp.)
ἐπαιρω

Thursday

ἑπομαι
ἐργαζομαι
ἐρχομαι
  ἀπερχομαι
  ἐξερχομαι
  ἐπανερχομαι
ἐσθιω
εὑρισκω
εὐχομαι
ἐχω

Remote Learning Packet

NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.

April 6-10, 2020

Course: 11 Humane Letters

Teacher(s): Mr. Brandolini david.brandolini@greatheartsirving.org

Mr. Mercer andrew.mercer@greatheartsirving.org

Weekly Plan:

Monday, April 6

☐ Read and annotate *The Libation Bearers (TLB)*, lines 1-311 (p. 177-192)

☐ Answer reading questions

Tuesday, April 7

☐ Read and annotate *TLB*, lines 312-773 (p.192-211)

☐ Answer reading questions

Wednesday, April 8

☐ Read and annotate *TLB,* lines 774-1075 (p. 212-226)

☐ Answer reading questions

Thursday, April 9

☐ Read the attached lecture

☐ Compose a one-page reflective analysis on Aeschylus' *The Libation Bearers*

Friday, April 10

☐ No School!

Statement of Academic Honesty

I affirm that the work completed from the packet is mine and that I completed it independently.

I affirm that, to the best of my knowledge, my child completed this work independently

_____

Student Signature

_____

Parent Signature

Monday, April 6

We continue the tragic events of the house of Atreus with Aeschylus' *The Libation Bearers*. The drama is short, but complex; you are encouraged to continue signposting the major motifs and themes mentioned last week. Once again, the intention is for much of the reading to be done independently; that being said, we have included a brief lecture highlighting a couple of major points at the end of the week. Please note that this lecture is intended to be read on Thursday, after you have finished *The Libation Bearers* and before composing your reflective analysis for the week.

1. Read and annotate *TLB* lines 1-311 (p. 177-192). Pay close attention to details of time and place, e.g. how long has it been since *Agamemnon*? how does Argos as a whole seem to have reacted to the event? what effect has this had on the family outside of Clytaemnestra herself?
2.Complete the worksheet questions for this day's reading.

Tuesday, April 7

1. Read and annotate *TLB* lines 312-773 (p.192-211). Note the cyclical pattern of the prayer in the first half of the reading, weaving the words of Orestes, Electra, and the Chorus in and out of each other before converging and unifying in thought towards the end. Do your best to signpost what emotion, image, or theme each character is highlighting to help draw connections between each prayer.
2. Complete the worksheet questions for this day's reading.

Wednesday, April 8

1. Read and annotate *TLB* lines 774-1075 (p. 212-226). Pay special attention to the conversation between Clytaemnestra and Orestes; look for parallels between this moment and the climax of *Agamemnon*. Like in the first part, attempt to identify moments where characters make claims to Justice, Right, or divine compulsion for their actions.
2. Complete the worksheet questions for this day's reading.

Thursday, April 9

1. **Lecture**:

Now that we have the first two-thirds of the *Oresteia* under our belts, there are several more complex ideas and movements within the plays that warrant emphasis. The ideas we'll be covering briefly today are triads (thematic sets of three) and the reconciliation of the masculine and feminine.

a) Triads

The *Oresteia* is a dramatic progression, a transformative and epic (albeit painful) movement not unlike those we were able to only glimpse in our time with Homer. Aeschylus divides these sorts of movements into sets of three (much like the trilogy of dramas itself). In *Agamemnon* 169-184, we are encouraged to begin thinking of the events of the drama in light of the triad of Ouranos, Kronos, and Zeus; each son overthrew the father. It is especially important that Zeus, the victor and progenitor of law and order among the Olympian gods, is the third generation and the victorious one; hence the abundant references to "Saving Zeus" and "the third victor". If we were to align this scheme to the characters of the drama, it might look something like this:

1. Ouranos   =   Agamemnon

2. Kronos   =   Clytaemnestra

3. Zeus   =   Orestes

This parallel is a sign of hope, as it lends a divine quality to Orestes' actions, despite all of the grotesque suffering involved on all sides: in the big picture, his actions will (hopefully) result in a cleansing of old blood feuds and a re-establishment of law and justice in Argos (as the Leader of the Chorus suggests on *TLB* 1044). However, these are of course not the only triads within the trilogy. A curiosity in the opening of *TLB* contains a foreboding three-part movement that appears to be in tension with the original:

> But Justice waits and turns the scales:
>   a sudden blow for some at dawn,
> for some in the no man's land of dusk
> her torments grow with time,
>   And the lethal night takes others. (61-65).

If we are to align the movement from dawn to dusk to night with our triad, Orestes' actions seem to take on a more foreboding quality. As we have now seen at the end of the drama, the nature of his actions has caused him to be subjected to the wrath of the Furies. Whether he shall be consumed by "the lethal night" or not is the primary tension of *Eumenides*.

b) Reconciling the masculine and the feminine

One interesting thing to note about the triad of Agamemnon, Clytaemnestra, and Orestes is that each claims a family member of the opposite gender as their victim: Iphigenia for Agamemnon, Agamemnon for Clytaemnestra, and Clytaemnestra for Orestes. Complicating this dynamic further is the fact that Cassandra and Aeisthus are evidence of the lack of fidelity and unity. The "mission statement",

so to speak, of *The Libation Bearers* is to set the household of Atreus back in order; the key to this appears to be the cooperation and familial bond between Orestes and Electra.

Electra recognizes Orestes once and for all once she is shown a piece of clothing that she wove for him--both a contrast with Agamemnon's "great robe" that Clytaemnestra wove (975, 1010, among others) and a literal sign of her love and care for her brother, the cause of their reunion. As they embrace and Electra names Orestes as the "four loves in one" (240) of her family, she declares him to be the entirety of her family now. We are given a moment of hope at the idea of Orestes healing the wound between masculine and feminine forces within the household.

Of course, the sins of his parents still plague Orestes, and he must wrestle with the inherent contradiction of the good of avenging his father and the evil of murdering his own mother before any clear sense of order can be established. The apparent dual morality of certain actions appears to also be related to the trilogy's ongoing emphasis on double meanings: for example, page 219 is rife with references to "double fates", "the double lion", and "the double onslaught" (918, 925-26). Thus far, every victory or moral claim has had someone who holds the opposite perspective. I shall withhold from saying too much on the subject of Orestes' difficult choice, however, as I hope for it to play a key role in your reflective analysis this week.

---

2. **Prompt for *The Libation Bearers* reflective analysis**: As Orestes hesitates to kill Clymtaemnestra in the climax of the drama, we see this exchange:

> Orestes:
>   What will I do, Pylades? - I dread to kill my mother!
>
> Pylades:
>   What of the future? What of the Prophet God Apollo,
>   the Delphic voice, the faith and oaths we swear?
>   Make all mankind your enemy, not the gods.   (*The Libation Bearers* 886-889)

This should jump out as significant, if only for it being the only time we've seen Pylades speak. In at least two thoughtful paragraphs, attempt to explain why Pylades' words succeed in persuading Orestes. Your answer should also draw from at least one of the major themes we've highlighted so far.

_____
_____
_____
Questions

_____

Monday: *TLB* **lines 1-311 Reading**

Answer in complete sentences.

1. What might the fact that this drama opens with a prayer say about the ethos of the drama, or what tone does it set for what is to come?

_____
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2. Toward the start of the drama, what reason does the Chorus give for the sudden decision to pour libations at Agamemnon's grave?

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3. What is it that unites Electra, daughter of the king, and the chorus of slaves in the royal house? What do they have in common that brings them together in this section?

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4. Why does Electra re-focus the love she had toward her mother and late sister toward her brother?

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5. What is the primary motivation for Orestes to avenge Agamemnon? What does he suggest the consequences for neglecting this would be?

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1. "It is the law: when the blood of slaughter wets the ground it wants more blood" (*TLB* 394-5). What "law" is being referred to here?

_____

_____

_____

_____

2. What seems to be the purpose or telos of the lengthy dialogue with the dead before the altar (ending at line 496)? What might Orestes and Electra be trying to accomplish?

_____

_____

_____

_____

3. How does Clytaemnestra react to the news delivered by Orestes, posing as a stranger?

_____

_____

_____

_____

Wednesday: *TLB* lines 774-1075 Reading Questions

Answer in complete sentences.

1. Describe your impression of Aegisthus based on his brief appearance in this scene.

_____

_____

_____

_____

2. According to Orestes, what is his next move after avenging the death of his father?

_____

_____

_____

_____

3. Orestes convinces himself that killing his mother is an act of justice. She had, in part, justified her killing of Agamemnon by appealing to his sacrifice of their daughter. Is one of these acts more in accordance with true justice, or were both of them equally warranted?

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Thursday: 11th Grade Humane Letters *The Libation Bearers* Reflective Analysis

Answer in at least two substantial paragraphs. Please see the lesson plan above for the prompt.

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Remote Learning Packet

NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.

April 6 - 9, 2020

Course: 11 Physics
Teacher: Miss Weisse natalie.weisse@greatheartsirving.org
Resource: *Miss Weisse's Own Physics Textbook* — pertinent pages found at the end of this packet

Weekly Plan Checklist:

Monday, April 6
☐ Read & Understand Notes on the Conservation of Momentum (pages 20-26)
☐ Perform the Conservation of Mass Experiment if Your Parents Give You a Thumbs Up
☐ Email Miss Weisse with Questions & to Get Solutions!

Tuesday, April 7
☐ Read & Understand Notes on the Conservation of Momentum (pages 27-30)
☐ Complete Unit 8 Worksheet 3 Problems #1-3
☐ Email Miss Weisse with Questions & to Get Solutions!

Wednesday, April 8
☐ Review Notes From Tuesday
☐ Complete Unit 8 Worksheet 3 Problem #4-6 (same sheet of paper as yesterday, please!)
☐ Email Miss Weisse with Questions & to Get Solutions!

Thursday, April 9
☐ Review Notes on Conservation of Momentum — page 27 will be especially helpful
☐ Complete Unit 8 Worksheet 4
☐ Email Miss Weisse with Questions & to Get Solutions!

Friday, April 10 — No School

Statement of Academic Honesty

I affirm that the work completed from the packet is mine and that I completed it independently.

I affirm that, to the best of my knowledge, my child completed this work independently

_____
Student Signature

_____
Parent Signature

DAILY PLANS

Monday, April 6

➔ Read Pages 20-26 of *Miss Weisse's Own Physics Textbook*

➔ Perform the Conservation of Mass Experiment if Your Parents Give You a Thumbs Up. Email me if you'd like instructions.

➔ Email Miss Weisse with Questions About the Notes!

Tuesday, April 7

➔ Read Pages 27-30 of *Miss Weisse's Own Physics Textbook*

➔ Complete the following problems on a sheet of paper with a full heading — Unit 8 Worksheet 3

1. Jude (m = 50.0 kg) and Alex (m = 65.0 kg) are at rest on frictionless in-line skates. The Jude pushes the Alex so that Alex rolls away at a speed of 10.0 m/s. What is Jude's final velocity?

2. In a railroad yard, an empty boxcar, coasting at 3.0 m/s, collides with a loaded car that is stationary. The two cars then move down the track together. Each of the boxcars has a mass of 9000 kg when empty, and the loaded car contains 55,000 kg of lumber. At what speed do the car move after the collision?

3. An astronaut of mass 80.0 kg is holding an empty oxygen tank of mass 10.0 kg. By pushing the tank away with a speed of 2.0 m/s, the astronaut recoils in the opposite direction. What is the velocity (including direction) of the astronaut?

➔ Email Miss Weisse with Questions & to Get Solutions!

Wednesday, April 8

➔ Review Pages 27-30 of *Miss Weisse's Own Physics Textbook*

➔ Complete the following problems on a sheet of paper with a full heading — Unit 8 Worksheet 3 (continued)

1. A 50.0 kg cart is moving across a frictionless floor at 2.0 m/s. A 70.0 kg boy, riding in the cart, jumps off so that he hits the floor with zero velocity. What is the velocity (including direction) of the cart after the boy jumps off?

2. A 2.0 kg melon is balanced on a circus performer's head. An archer shoots a 50.0 g arrow at the melon with a speed of 30 m/s. The arrow passes through the melon and emerges with a speed of 18 m/s. What is the velocity (including direction) of the melon after the arrow passes through?

3. Old cannons were built on wheeled carts, both to facilitate moving the cannon and to allow the cannon to recoil when fired. When a 150 kg cannon and cart recoils at 1.5 m/s, at what velocity would a 10.0 kg cannonball leave the cannon?

➔ Email Miss Weisse with Questions & to Get Solutions!

Thursday, April 9

➔ Review Pages 20-30 of *Miss Weisse's Own Physics Textbook*

➔ Complete the following problems on a sheet of paper with a full heading — Unit 8 Worksheet 4

1. Airplanes maneuver on the ground by using thrust from their jets or propellers. A fully loaded, 396,900 kg Boeing 747-400 gets a total of 1100 kiloNewtons of thrust from its jet engines. Takeoff speed depends on a number of factors like air temperature, airplane weight, and airport elevation, but let us say that liftoff will occur at 170 mph.
   a. Determine the time the plane takes to go from 0 to 170 mph. (1 mile = 1600 meters)

   b. What is the momentum of the airplane at take-off?

   c. Calculate the impulse the plane receives from the engines during takeoff.

   d. What additional information would be needed to calculate the velocity of the exhaust gasses from the engines?

2. An apple (m = 100 g) falls from a tree. What is the recoil momentum of the branch it was hanging on?

3. a. Why is it difficult for a fire-fighter to hold a hose that ejects large amounts of high-speed water?

   b. Calculate the force needed to hold a 6.0 cm diameter fire hose in place when the water flow rate is 110 m³/hour. (density of water: 1000 kg/m³)

➔ Email Miss Weisse with Questions & to Get Solutions!

Friday, April 10 — No School

Well done! You've made it to the end of week 2 of distance learning,
and, what would have been the end of the 3rd Quarter!
I appreciate the work you are doing and
the effort you are putting into these assignments.
Have a wonderful, long weekend!

Warmly, Miss Weisse

Miss Weisse's Own Physics Textbook

An Introduction to the Conservation of Momentum

Conservation Laws

Hopefully, you remember learning a few conservation laws from your middle school years and, dare I say, Chemistry with me last year...

CONSERVATION OF MATTER (MASS)	CONSERVATION OF ENERGY	CONSERVATION OF MOMENTUM
No matter is created or destroyed during any physical or chemical change IN A CLOSED SYSTEM but can be rearranged and can change appearance.	No energy is created or destroyed IN A CLOSED SYSTEM but can be altered from one form to another (i.e. kinetic, potential, sound, etc.)	No momentum is created or destroyed (or gained or lost) IN A CLOSED SYSTEM but can be transferred between objects during a collision.

These 3 Conservation Laws have two statements in common

1) "nothing is created or destroyed" → Conservation   This is the
(Latin "conservare"= to keep & preserve)

2) "IN A CLOSED SYSTEM"

A **Closed System** limits the scope of what objects, space, forces we are considering.

A few examples:

Ex.1 Conservation of Matter - You might remember (and could recreate...) the vinegar - baking soda lab.

very full baggy, empty cup: bowl

Baggy   Baking Soda   Vinegar

Total Mass 700g
(I'm making this up)

You pour the baking soda into the vinegar in the already sealed baggy.
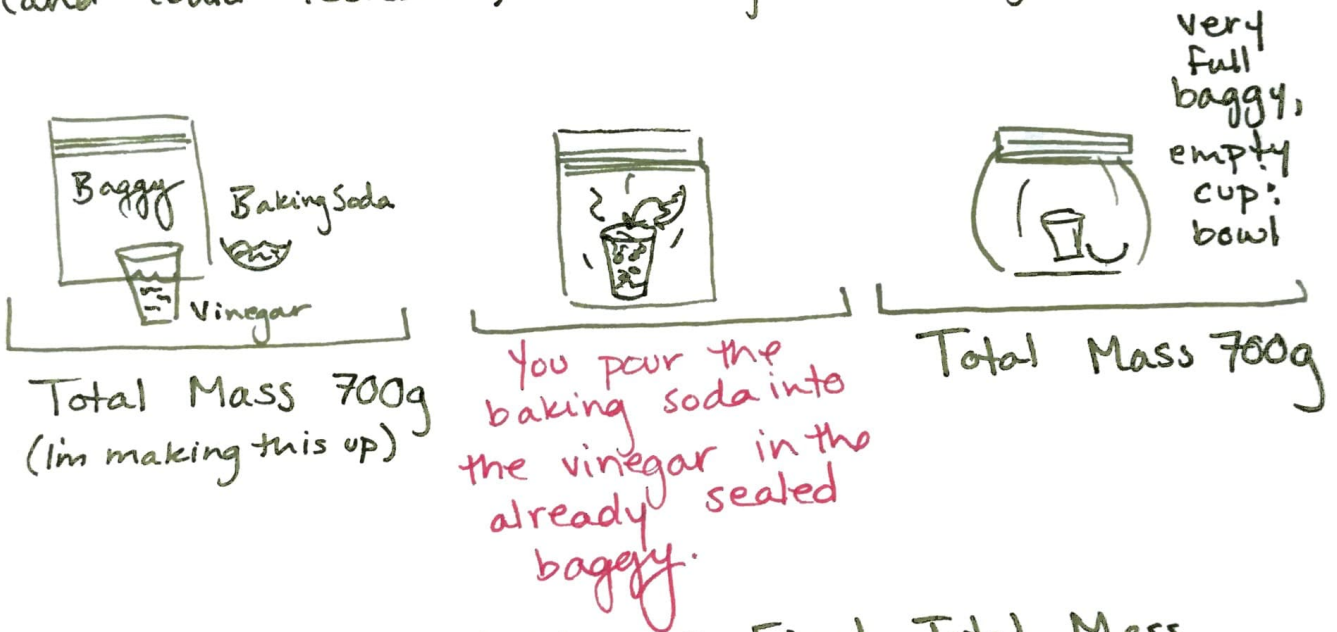
Total Mass 700g

Initial Total Mass = Final Total Mass
∴ Matter (via the mass) is CONSERVED!

Ex. 2 Conservation of Energy - You might remember me holding up marker and saying "Potential Energy..." then dropping the marker and saying "Kinetic Energy!"

5 kJ Potential Energy
(Total = 5 kJ)

2.5 kJ Kinetic Energy
2.5 kJ Pot. Energy
(Total = 5 kJ)

0 kJ Pot. Energy
5 kJ Kinetic Energy
(Total = 5 kJ)
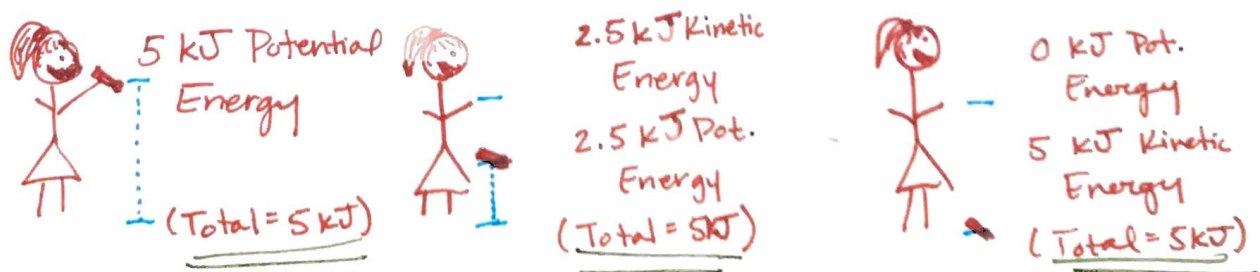
In Ex. 1 the baggy is our closed system.

. The initial mass included the baggy, cup, bowl, vinegar, and baking soda.

. The chemical reaction (mixing of vinegar and baking soda) was done in the SEALED baggy so NO MASS could escape in the form of gas.

* If the baggy were open, the gas created by the rearrangement of the atoms that make up the vinegar and baking soda WOULD ESCAPE! This would not be a closed system, but an OPEN SYSTEM! And, the final mass would be less than the initial mass.

In Ex. 2, as the marker falls the potential energy it had when being held above the ground continuously transforms into Kinetic energy. So the sum of potential energy and kinetic energy always add to the same total. Well... until a new force is introduced! The "closed system" ends when the marker hits the floor.

* We could expand our closed system so the floor is included, but things get complicated. We'd say something like the kinetic energy becomes sound energy (the thud we hear), and those sound waves are vibrating air particles (kinetic again) then interacts with a wall, and... you get the point.

Note - A closed system is also called an isolated system. You will see both in these notes and in problems.

Now to the point of the lesson —

Conservation of Momentum

Conservation of Momentum is mostly used to describe collisions between objects.

SIDE NOTE
(this is the moment we realize our momentum labs would have been colliding objects, and that would have been great fun... alas)

So the total momentum of all objects before the collision must be equal to the total momentum of all objects after the collion — in an isolated system.

momentum before a collision = momentum after a collision

$$\vec{P}_{i,\,total} = \vec{P}_{f,\,total}$$

$$\vec{P}_{1,i} + \vec{P}_{2,i} + \vec{P}_{3i} = \vec{P}_{1,f} + \vec{P}_{2,f} + \vec{P}_{3,f}$$

the SUM of the intial momentum of all objects in the system

the SUM of the final momentum of all objects in the system

NOTICE! I've added vector hats to momentum now.

$$\vec{P} = m \cdot \vec{V}$$

Since

scalar · vector

a # scales the
vector, it
makes the value
bigger or smaller
but doesn't affect
the DIRECTION.

∴ the momentum of an object has
the same direction as its velocity.

This was true for force and acceleration
as well. Acceleration was always in the same

$$\vec{F}_{net} = m \cdot \vec{a}$$

direction as the net force.

Another way to think about the
conservation of momentum is to
say there is NO IMPULSE or NO CHANGE IN
MOMENTUM IN A COLLISION.

$$\vec{J} = 0 \text{ N·s}$$
$$\Delta\vec{p} = 0 \text{ N·s}$$

This is simple to show. We've already said

$$\vec{P}_{total,intial} = \vec{P}_{total,final}$$

If you substract the ~~total~~, initial momentum from both sides we get

$$\Delta\vec{p} = \vec{P}_{total,final} - \vec{P}_{total,initial}$$

$$\boxed{\Delta\vec{p} = 0 \text{ N·s} \quad \underline{OR} \quad J = 0 \text{ N·s}}$$

Because $\vec{P}_f$ and $\vec{P}_i$ are equal if we subtract one from the other the result is zero.

Now that we are thinking about $\Delta\vec{p}$ and Impulse (J), I hope your mind has jumped to the definition of these.

$$J = \Delta\vec{p} = \underline{\underline{F_{net} \cdot \Delta t}}$$

Let's think about a collision (and let's go ahead and assume there's no friction...)

Collision!
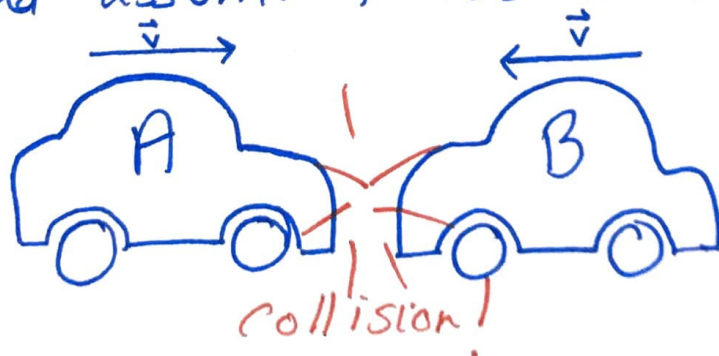
Let's draw a force diagram for each car.

CAR A

F_n

$F_{B \to A}$

F_g

$F_{net, A} = F_{B \to A}$

CAR B

F_n

$F_{A \to B}$

F_g
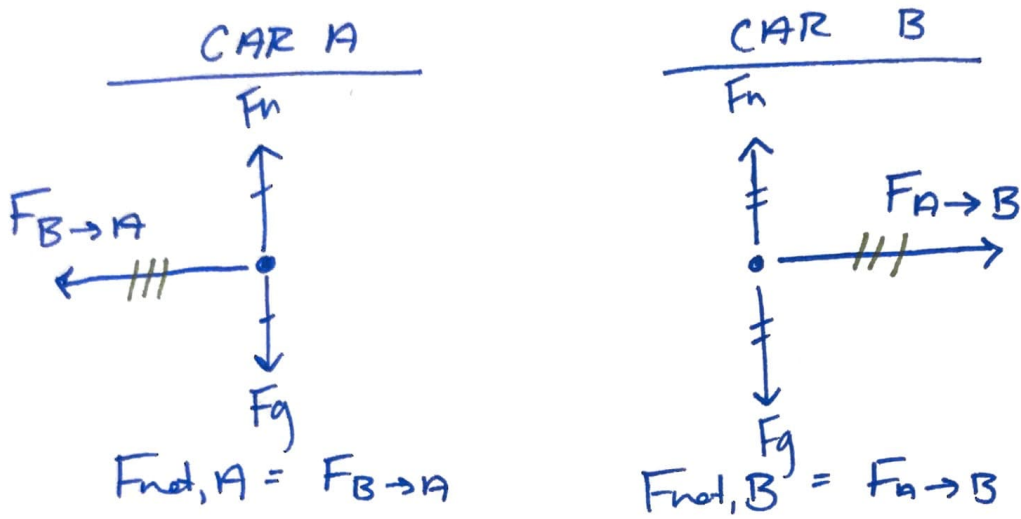
$F_{net, B} = F_{A \to B}$

According to Newton's 3rd Law, the forces of car A hitting B and car B hitting A are EQUAL but OPPOSITE. They are force pairs!

$$F_{A \to B} = - F_{B \to A}$$

Also, the two cars are in contact for the SAME AMOUNT OF TIME, Δt.

$$(\Delta t)(F_{A \to B}) = (- F_{B \to A})(\Delta t)$$

$$(\Delta t)(F_{net, B}) = (- F_{net, A})(\Delta t)$$

Remembering that $(F_{net})(\Delta t) = J = \Delta p$

$$J_B = - J_A$$

$$\Delta \vec{P_B} = - \Delta \vec{P_A}$$

∴ The Sum of $\Delta \vec{p}$ of the system $(\Delta \vec{P_B} + - \Delta \vec{P_A}) = 0$. There is no Δ momentum, momentum is conserved!

Solving Problems Using the Conservation of Momentum

Review of What We Know

→ momentum is mass in motion

$$\vec{P} = m \times \vec{V}$$

→ momentum is a vector quantity (it has both magnitude and direction) and its direction will always be the same as the direction of velocity

→ Impulse is a Change in Motion

$$J = \Delta\vec{P}$$

It is also the net force acting on an object time the time the force is acting

$$J = F_{net} \times \Delta t = \Delta\vec{P}$$

→ In a closed (isolated) system, No momentum is created or destroyed.

$$\text{total } \vec{P}_{intial} = \text{total } \vec{P}_{Final}$$

This also means there is no change in $\vec{P}$.

$$\Delta\vec{P} = 0 \frac{kg \cdot m}{s} \quad \therefore \quad J = 0 \text{ N·s}$$

This last fact is the most important, for the following problems. We're just going to jump in and explain as we go.

Example 1: While playing a game of pool, you aim to hit the 3-ball straight into the corner pocket. To do so you hit the cue ball ($m = 2.0kg$) so it travels at a velocity of $2 m/s$ just before it hits the 3-ball. After the collision the 3-ball travels with a velocity of $2 m/s$. The 3-ball has a mass of $1.6 kg$. What is the final velocity of the cue ball?

① To begin, we're going to draw a dotted line down the middle the represents the collision and separates the initial and final values.

Initial Values			Final Values	
cue ball	3 - ball		cue ball	3 - ball
$m = 2.0 kg$	$m = 1.6 kg$		$m = 2.0 kg$	$m = 1.6 kg$
$\vec{V_i} = 2 m/s$	$\vec{V_i} = 0 m/s$		$V_f = ?$	$V_f = 2 m/s$
$\vec{P_i} = 2×2 = 4 \frac{kg·m}{s}$	$\vec{P_i} = 1.6×0 = 0$		$P_f = 0.8$	$P_f = 1.6×2 = 3.2 \frac{kg·m}{s}$

↑ COLLISION

total $\vec{P}_{inital} = P_{cue} + P_3 \neq$ total $\vec{P}_{final} = \vec{P}_{cue} + \vec{P}_3$

$4 + 0 = P_{f,cue} + 3.2$

$4 = P_{f,cue} + 3.2$

$-3.2 \qquad\qquad -3.2$

$\vec{P}_{f,cue} = 0.8$

$P = mV$

$\frac{0.8}{2} = \frac{2·V}{2}$

$\boxed{0.4 m/s = \vec{V_f}}$

② We list the given information.

③ Solve for momentums you have enough into to know.

④ Determine total $\vec{P}_{initial}$ and $\vec{P}_{final}$.
   * THIS IS THE CONSERVATION STEP!

⑤ Solve for missing momentum values

⑥ Solve for the cue ball's final velocity

Let's think about how we solved that —

〰1) Identified all info before and after the collision

〰2) Found missing info that we could easily solve
   for with info already known (solve for $\vec{p}$!)

〰3) Wrote conservation of momentum equations

$$\begin{array}{ccc}
\text{sum of all } \vec{p} & = & \text{sum of all } \vec{p} \\
\text{before collision} & & \text{after collision}
\end{array}$$

〰4) Used the conservation of momentum eqn.
   to find missing momentum(s)

〰5) Solved for all unknown values.

Example 2: On an icy road (no friction!) a 5,000 kg
truck rear-ends a 1,200 kg car that had been traveling
at 13m/s. The collision caused the car to speed up
and the truck to slow from 14 m/s to 12 m/s. What
is the final velocity of the car?

FOLLOWING THE COLOR-CODED STEPS ABOVE...

before		after	
truck	**car**	**truck**	**car**
$m = 5000$ kg	$m = 1200$ kg	$m = 5000$ kg	$m = 1200$ kg
$V = 14$ m/s	$V = 13$ m/s	$V = 12$ m/s	$V = ? = 21.3$ m/s
$P = (5000)(14)$	$P = (1200)(13)$	$P = (5000)(12)$	$P = ? = 25,600 \frac{kg \cdot m}{s}$
$= 70,000 \frac{kg \cdot m}{s}$	$= 15,600 \frac{kg \cdot m}{s}$	$= 60,000 \frac{kg \cdot m}{s}$	$\frac{P}{m} = \vec{V} = \frac{25,600}{1200}$

← collision →

$$\text{total } \vec{P}_{intial} = \vec{P}_{truck} + \vec{P}_{car} = \text{total } \vec{P}_{final} = \vec{P}_{truck} + \vec{P}_{car} = 21.3 \, m/s$$

$$70,000 + 15,600 = 60,000 + \vec{P}_{car, final}$$

$$85,600 = 60,000 + \vec{P}_{car, final}$$

$$\frac{-60,000 \qquad -60,000}{}$$

$$25,600 \frac{kg \cdot m}{s} = \vec{P}_{car, final}$$

<u>Example 3:</u> A 10,000 kg railroad car, A, traveling at a speed of 24.0 m/s strikes an identical car, B, at rest. The cars lock together as a result of the collision. What is the speed of the two trains together just after the collision? **NOTICE! Because the two objects are now moving as 1, we can treat them like one!**

<u>Before</u>

<u>train A</u>	<u>train B</u>
$m = 10,000 kg$	$m = 10,000 kg$
$\vec{V} = 24.0 m/s$	$\vec{V} = 0 m/s$
$P = (24)(10,000)$	$P = 0 \frac{kg \cdot m}{s}$
$= 240,000 \frac{kg \cdot m}{s}$	

<u>After</u> - <u>train A & B</u>

$m = (10,000)2 = 20,000 kg$

$\vec{V} = ?$

$P = 240,000 \frac{kg \cdot m}{s}$

total $\vec{P}_{intial} = \vec{P}_{A,i} + \vec{P}_{B,i}$

$240,000 + 0$

$240,000$

total $\vec{P}_{final} = \vec{P}_{A+B}$

$\vec{P}_{A+B}$

$\vec{P}_{A+B}$

$$\vec{V}_{A+B, final} = \frac{P_{AB}}{m_{AB}}$$

$$= \frac{240,000 \ kg \cdot m/s}{20,000 \ kg}$$

$$\boxed{\vec{V}_{A+B, final} = 12 m/s}$$

This makes sense!

$p \propto m\vec{v}$

if $\uparrow m, \downarrow \vec{V}$ or more specificall[y]

if $2m, \frac{1}{2}\vec{V}$

HELPFUL NOTE

* You will also see problems where you treat two objects as one to begin with the treat them as two after a collision (or other event.

Remote Learning Packet

NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.

April 6 - April 10, 2020
Course: 11 Precalculus
Teacher: Mr. Simmons michael.simmons@greatheartsirving.org

Weekly Plan:

Monday, April 6
☐ Problem set 4.7: 6-12 answer key
☐ "Introduction to Angles" handout

Tuesday, April 7
☐ Start "Radians" handout

Wednesday, April 8
☐ Continue "Radians" handout

Thursday, April 9
☐ Finish "Radians" handout

Friday, April 10
☐ No school!

Statement of Academic Honesty

I affirm that the work completed from the packet
is mine and that I completed it independently.

I affirm that, to the best of my knowledge, my
child completed this work independently

_____
Student Signature

_____
Parent Signature

Monday, April 6

Today you will need
- This packet (preferably printed out)
- The answers for section 4.7 that are in the back of the textbook
- A pencil
- Paper
- Fortitude

1. Check your answers to problem set 4.7: 6-12.
2. Read this, here:

This concludes our discussion of exponential and logarithmic functions. We have already taken a test covering sections 4.1-4.5, and since then we have covered 4.6 and 4.7. We will be omitting section 4.8, since it deals not primarily with mathematics, but with the practical application of mathematics. A test over sections 4.6 and 4.7 is forthcoming, but due to the difficulties of testing remotely, the date of this test cannot yet be determined. So, we will move on to the next topic. When a date for the test can be set, we will then spend time in review preparing for the test, but for right now, let's put exponential and logarithmic functions to the side, and move on to another topic that will prepare us well for calculus.

Math is the study of quantity, of number and shape, and one of the fundamental aspects of shape is angle. We've all seen angles before, and we'd probably all say that we know what an angle is. But there is a difference between seeing and looking, between knowing what something is intuitively and analyzing it rigorously. Here begins our rigorous analysis of angle. The simplest shape that can be constructed from angles is a triangle, and hence the branch of mathematics into which we are about to delve is known as **trigonometry** (from Modern Latin *trigonometria*, from Greek *trigonon* "triangle" (from *tri-* "three" + *gōnia* "angle, corner" + *metron* "a measure").

Notice, we are moving on from one topic and starting another. This is a major shift. I am very sorry that we can't all be in the same room as we should be. This should be a grand transition: having routed exponential functions, we charge on to conquer the branch of mathematics perhaps most feared above all, the much-slandered *trig*. It is sad that I can't be there to encourage you in person, to quell whatever fears you might have at what may appear to be a daunting task, but we make do with what we have. Trigonometry is mathematics, and mathematics is an adventure. You are here to challenge your mind and explore the possibilities of logical deduction, to discover the beauty of these eternal truths. This will be more difficult than it should be, given the isolation from each other that we are all experiencing, but again, take courage and persevere. I am available through email if you would like to reach out, and I would be happy to hear from you.

3. Read through the handout entitled "Introduction to Angles," following all instructions therein. This is mathematical writing. Mathematical reading is slow going. Read slowly. Don't move on

from a sentence until you've understood what it says. If you read at a normal pace, or even a slow but steady pace of reading aloud, you're probably moving too fast. Pause after every sentence to make sure you understand what it has said. Draw diagrams if it's helpful, even if you're not instructed to. Enjoy!

Tuesday, April 7

Today you will need
- This packet (preferably printed out)
- A pencil
- Paper
- Fortitude

1. If you have not finished reading it, finish reading yesterday's handout ("Introduction to Angles").
2. Similarly to yesterday, today you will be reading about angles. Find the handout entitled "Radians," and start reading through it, completing all instructions therein. (You will have this week to complete it, so don't worry if you don't finish by the end of 40 minutes.) Pause when it tells you to pause. Force yourself honestly to answer the questions it asks to the best of your ability without moving on until you've done so. Again, read slowly. Slooooowly. Pause after every sentence to make sure you've understood what it says. This is math. Mathematical reading is slow going. Read. Slowly.

Wednesday, April 8
Today you will need
- This packet (preferably printed out)
- A pencil
- Paper
- Fortitude

1. Continue completing the handout entitled "Radians." If you have finished, review it. Make sure you've learned all vocabulary from both handouts.

Thursday, April 9
Today you will need
- This packet (preferably printed out)
- A pencil
- Paper
- Fortitude

1. Continue completing the handout entitled "Radians." If you have finished, review it. Make sure you've learned all vocabulary from both handouts.

Introduction to Angles

Precalculus
Mr. Simmons

This handout is simply a primer on the terminology surrounding angles, so that we're all on the same page when we talk about them. Please review the following definitions and then answer the questions at the end. I hope the vocabulary here isn't too daunting.

As a preface, consider this: a good way to think about angles is in terms of rotational motion (similarly to how we talk about a ray as "emanating" or "extending" from a single point, even though it is really a fixed object that doesn't move). Imagine you're standing on the xy-plane in the fourth quadrant (bottom-right), and you want to walk into the first quadrant (upper-right), and there's a door in the way, with its hinge at the origin and its knob at $(1,0)$. You open the door a little too fast, so the knob slams into $(0,1)$, putting a hole through the y-axis. There, you've got a right angle. This image helps us phrase the measurement of angles in terms of rotation. Rotation "begins" when the knob is at $(1,0)$ and "ends" when the knob is at $(0,1)$. There's nothing actually dynamic (motion-related) about angles—since they are, like everything else in mathematics, abstract objects, eternally constant and immutable—but it's helpful to think of them as dynamic so that we finite, mutable, inconstant humans can describe and understand them more easily.

Learn these definition. You don't have to memorize them verbatim, but if asked, you should be able to provide, off the top of your head, a mathematically correct definition.

Definition (RAY). A ray is a set containing one point on a line and all points extending in one direction from that point.

Definition (ANGLE). An angle is the union of two rays having a common endpoint.

Definition (VERTEX). A vertex is the common endpoint of two rays that form an angle.

Definition (INITIAL SIDE). The initial side of an angle is the side of that angle from which rotation begins.

Definition (TERMINAL SIDE). The terminal side of an angle is the side of that angle at which rotation ends.

Definition (MEASURE OF AN ANGLE). The measure of an angle is the amount of rotation from the initial side to the terminal side. Conventionally, we use Greek letters as variables for the measure of an angle, typically theta (θ or ϑ), phi (ϕ or φ), alpha (α), beta (β), or gamma (γ).

Definition (DEGREE). The degree (°) is a unit of measure describing the size of an angle of one degree (1°) as one 360th of a full revolution of a circle.

Definition (STANDARD POSITION). Standard position is the position of an angle having its vertex at the origin and its initial side along the positive x-axis.

Definition (POSITIVE ANGLE). A positive angle is an angle measured counterclockwise from the positive x-axis.

Definition (NEGATIVE ANGLE). A negative angle is an angle measured clockwise from the positive x-axis.

Definition (QUADRANTAL ANGLE). A quadrantal angle is an angle whose terminal side lies on an axis (e.g., an angle of $0°$, $90°$, $180°$, or $270°$).

Definition (CENTRAL ANGLE). A central angle of a circle is an angle whose vertex is the circle's center.

Complete the following exercises on a separate sheet of paper.

Exercise 1. Sketch an angle of $30°$ in standard position.

Exercise 2. Sketch an angle of $-135°$ in standard position.

Exercise 3. Sketch the angle of $240°$ in standard position as a central angle of the unit circle.

Radians

Precalculus
Mr. Simmons

Read through this handout carefully and pause to think and respond when instructed.

We got the unit called degrees (°) by dividing a full rotation into 360 equally sized angles and saying that each of those angles had measure 1°. Note that the number 360 was an arbitrary choice: we could have chosen 4, or 10, or any other counting number. But 360 is useful, because it is divisible by so many numbers (i.e., by 1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 15, 18, 20, 24, 30, 36, 40, 45, 60, 72, 90, 120, 180, and 360 itself). Fun fact: 360 is therefore called a "highly composite" number. So are 12 and 60, which is why there are 12 inches in a foot and 60 minutes in an hour (and 60 seconds in a minute).[1]

But is there a less arbitrary way to measure an angle? When we look at an angle and wonder how big it is, we generally wonder, in an intuitive sense, how "far apart" the two rays are. A bigger angle will mean two rays that are "further apart." But, of course, the distance between the two rays is ... zero. Always. Because they're touching (at the vertex).

So what do we do? Last handout, we pictured the standard position right angle as the swinging open of a door whose hinge is at the origin and whose knob swings from $(1,0)$ to $(0,1)$. This dynamic representation of an angle allows us to measure the angle not by asking how "far apart" the rays are (because that number will always be zero), but by asking how far the knob has swung. So let's trace the path of the knob.

In the space below (or, if you haven't been able to print out this document, then on a separate sheet of paper), sketch the aforementioned standard position right angle, the one represented by the door swinging open, with its vertex at the origin and rays that pass through the points $(1,0)$ and $(0,1)$:

Now put your pencil down at $(1,0)$ and start drawing the unit circle counterclockwise, but stop once you get to $(0,1)$. If we think of this angle as representing the opening of the door, then what you just traced is the path of motion of the doorknob.

---

[1] Just for fun, consider the pros and cons of the metric system of units versus the imperial system of units. Sure, the metric system simplifies everything to base 10, but there are good reasons to use highly composite numbers like 8, 12, and 36.

What you just drew is called an **arc**. An arc may be a portion of a full circle, a full circle, or even more than a full circle. The length of the arc around an entire circle is called the **circumference** of that circle. The arc you just drew is just a portion of the unit circle (one fourth, to be specific), and it has two **endpoints**: $(1,0)$ and $(0,1)$.

We say that the arc you just drew **subtends** our right angle, because the angle's rays go through the arc's endpoints, and the angle's vertex is the arc's circle's center (in this case, the origin). We said earlier that measuring the path of the knob, that is, measuring this arc, would help us measure the angle. Well, this arc has length one quarter the circumference of the unit circle. Take a moment to find out exactly what that is. Write your answer here (or on a separate sheet of paper):

There, we have a number! Can we say now that that's the measure of our angle? Why or why not? Write down your thoughts:

If we look at any given angle, intuitively we want to measure it, as we've said, by the length of the arc that subtends it. But the problem is, it is subtended by many arcs. An infinite number of arcs. Take, for instance, the right angle we were just considering. Depending on which circle you choose to draw over it (centered at the origin, of course), you could make it subtended by an arc of any length you like by simply making the the circle bigger or smaller. So how can we use arc lengths to measure angles?

One way to do it is simply, as we just did, to choose the unit circle every time. Given any angle, look at the arc on the unit circle that subtends that angle, and call that arc length the measure of the angle. A right angle is subtended by an arc of length—you calculated it earlier—$\frac{\pi}{2}$.[2] So we say that a right angle has measure $\frac{\pi}{2}$. Beautiful!

But picking the unit circle still feels a bit arbitrary. What's so special about the unit circle? Instead of picking a particular circle, shouldn't we pick an arbitrary circle? Angles aren't doors, they're connected rays. Unlike doors, rays are infinitely long, and there's nothing special about one point on the ray versus another (other than the vertex, but we already said we can't use that one). Is there any way that, given an angle we're trying to measure, we can come up with a measure, a number, based on arc length, without it mattering which arc we pick? Sounds crazy. Stop and think about it. Write your thoughts here (or, as before, if appropriate, on a separate sheet of paper):

---

[2] This is because the unit circle has circumference $2\pi r = 2\pi\left(1\right) = 2\pi$, one fourth of which is $\frac{\pi}{2}$.

Consider that, for any given angle you're trying to measure, as you choose bigger and bigger arcs, the circles that they are portions of will also be bigger and bigger. And what does it mean for a circle to be bigger? Before moving on, take a moment to recall the precise definition of a circle.

. . .

A circle is the set of all points equidistant from a center point, and we call that distance the circle's radius. So a circle is defined in terms of its radius. What it *means* for a circle to be "bigger" is that its radius is longer. So the bigger the arc you choose, the bigger the radius that goes along with it. If we choose a circle of radius 2, then instead of getting an arc of length $\frac{\pi}{2}$, we get an arc of length ... well, what's a quarter of this new circle's circumference? Write it down:

That's right, the new arc length is π. That's different from $\frac{\pi}{2}$. Sounds like a problem. But wait, if we got an arc of length $\frac{\pi}{2}$ when we had a circle of radius 1, and we got an arc of length π when we had a circle of radius 2 .... Do we see a pattern? What's the pattern? Write down your thoughts:

Just as every integer, even if we don't write it as a ratio, is a ratio with a denominator of 1, so is every angle measure a ratio. When we pick the unit circle, we are choosing a denominator of 1; when we pick a circle of radius 2, we are choosing a denominator of 2; when we pick a circle of radius 3, we are choosing a denominator of 3; and so on. (I'm picking integers only because they're simple—you could pick literally any positive real number.) But

$$\frac{\frac{\pi}{2}\text{ arc length units}}{1\text{ radius unit}} = \frac{\pi\text{ arc length units}}{2\text{ radius units}} = \frac{\frac{3\pi}{2}\text{ arc length units}}{3\text{ radius units}} = \cdots = \frac{\pi}{2}.$$

So we can reasonably say, without any arbitrary choice, that the measure of a right angle is $\frac{\pi}{2}$. The ratio of arc length to radius doesn't change depending on which circle we pick. Given any angle, if you take an arc that subtends that angle and divide its length by its circle's radius, no matter which circle you choose, you always get the same answer. *The ratio of arc length to radius is constant for any given angle.* Sounds like we've found ourselves a consistent way to measure angles using arc lengths! This is particularly satisfying because it fits with our intuitive notion of angles as representing rotation. This way of measuring angles tells us quite straightforwardly how far the knob of our door has traveled, which is an intuitive way of picturing the size of the angle. Wonderful.

This measure of an angle—the one we get by dividing the arc length (of an arc that subtends the angle) by the radius of the circle (of which that arc is a portion)—is called the **radian measure** of an angle.

Teachnically speaking, the radian measure of an angle is stated in a unit called **radians**, where one radian is defined as the measure of the angle subtended by an arc on the unit circle of arc length 1—but very rarely does any mathematician write out the word "radians" or even the abbreviation "rad" next to the radian measure of an angle, and very rarely is that angle I just described, the one whose measure is 1 radian, ever used for anything. (It's also kind of ugly.[3]) Since the radian measure of an angle is gotten by dividing a length (an arc length) by another length (a radius), the length units cancel, leaving radians a dimensionless unit, or what mathematicians call a "pure number."

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[3] Fun exercise: explain why an angle of radian measure 1 is ugly. Or, alternatively, argue that it is beautiful. Feel free to email me with responses.

That was a lot of work! As a way of solidifying the concepts covered in the preceding pages, go ahead and read through the rigorous statements of the definitions you just learned. While learning these definitions verbatim is not necessary, you should be able to give a complete, mathematically precise definition of each of these words from memory.

Definition (ARC). An arc is a portion of a circle.

Definition (SUBTEND). An arc subtends an angle if and only if the angle's two rays pass through the arc's two endpoints.

Definition (RADIAN MEASURE). The radian measure of an angle is the ratio of the length of the arc that subtends the angle to the radius of the circle.

In other words, if s is the length of an arc of a circle, and r is the radius of the circle, then the central angle containing that arc measures $\frac{s}{r}$ radians. In a circle of radius 1, the radian measure corresponds to the length of the arc.

Definition (RADIAN). One radian is the measure of the central angle of a circle such that the length of the arc between the initial side and the terminal side is equal to the radius of the circle.

Complete the following exercises on a separate sheet of paper.

Exercise 1. Find the radian measure of one third of a full rotation.

Exercise 2. Find the radian measure of three fourths of a full rotation.

Exercise 3. Remember that a conversion factor is a fraction, equal to one, that you multiply a measurement by to change its units. For example, to change 2 feet into inches, I multiply 2 feet by the conversion factor $\frac{12 \text{ in}}{1 \text{ ft}}$ to get

$$2 \text{ ft} \times \frac{12 \text{ in}}{1 \text{ ft}} = 24 \text{ in.}$$

The feet cancel, leaving only inches.

Come up with conversion factors to convert from degrees to radians and from radians to degrees.

Exercise 4. Convert the radian measure $\frac{\pi}{6}$ into degrees.

Exercise 5. Convert the radian measure 3π into degrees.

Exercise 6. Convert $15°$ into radians.

Exercise 7. Convert $126°$ ito radians.

Exercise 8. In a clear, neat diagram, draw the unit circle, and then sketch in standard position the following angles, given in portions of a full rotation. Then label, at the intersection of each angle's terminal side with the unit circle, the measure of that angle in both degrees and radians. (You may include the unit label "radians" or "rad" on the radian measure if you would like, but you needn't.)

0, 1, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{1}{6}$, $\frac{5}{6}$, $\frac{1}{8}$, $\frac{3}{8}$, $\frac{5}{8}$, $\frac{7}{8}$, $\frac{1}{12}$, $\frac{5}{12}$, $\frac{7}{12}$, and $\frac{11}{12}$

For example, to draw and label an angle that is $\frac{1}{4}$ of a full rotation, you would draw the standard position right angle that we were dealing with all throughout this handout (the one represented by the swinging door) and label it, at the point $(0, 1)$, with the labels "90°" and "$\frac{\pi}{2}$."

Remote Learning Packet

NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.

April 6-10, 2020
Course: Spanish III
Teacher(s): Ms. Barrera annabarrera@greatheartsirving.org
Supplemental links: www.conjuguemos.com
www.spanishdict.com

Weekly Plan:

Monday, April 6
☐ Capítulo 4 Part II: Read about poems of love and friendship and identifying figurative language to understand a poem.
☐ Capítulo 4 Part II: Express your opinion about poetry readings.

Tuesday, April 7
☐ Capítulo 5 - A ver si recuerdas: Talk and write about jobs.
☐ Capítulo 5 - Discuss what is happening. Discuss volunteer jobs.

Wednesday, April 8
☐ Capítulo 5 - Review the present progressive, reflexive pronouns and object pronouns.
☐ Capítulo 5 - Introduction to new vocabulary and the present progressive.

Thursday, April 9
☐ Capítulo 5 - Trabajo y Comunidad: Job and volunteerism vocabulary.
☐ Capítulo 5 - Read and understand information about getting a job and the skills needed.

Friday, April 10
☐ No School!

Statement of Academic Honesty

I affirm that the work completed from the packet is mine and that I completed it independently.

I affirm that, to the best of my knowledge, my child completed this work independently

_____
Student Signature

_____
Parent Signature

Monday, April 6 Write all the answers to all assignments on a loose-leaf paper to be turned in.

Capítulo 4 Part II: Read about poems of love and friendship and identifying figurative language to understand a poem. Express your opinion about poetry readings.

1.**Textbook p.198-199 - Lectura**: *La poesia, expresión de amor y amistad.* Read the explanation of how to read a poem then read *Poema No. 15,* Pablo Neruda and *Homenajes a los padres chicanos*, Abelardo Delgado. Then answer the 5 questions under Comprendiste?

2.**Textbook pp. 200-201:** Read the following poems and then answer the questions under Comprendiste? Skip #7. *El amor en preguntas* de Elizabeth Torres, *Rimas* de Gustavo Adolfo Bécquer and *Como tu* de Roque Dalton. **I have included a page to a link in this packet of grammar practice and explanations.**

Tuesday, April 7

Capítulo 5 - A ver si recuerdas: Review - Talk and write about jobs. Discuss what is happening. Discuss volunteer jobs.

1.**Textbook p. 210 - Activity 4** *Para la comunidad* - Write down a table just like the one in the book. Now, write places where you can volunteer, what can be done there and for whom.

2. **Textbook p. 211 - Activity 6** *Segun el director* - Mr. Diaz is the director of a Service Center and he gives a lot of orders (commands). Use the verbs in the word bank and the appropriate pronoun to complete the sentence to finish the orders he gave his volunteers. Remember to include an accent mark in the appropriate syllable whenever necessary.

3. **Textbook p. 21**1 - **Activity 7** *Metas personales* Write down 5 goals that you want to accomplish this year. Use the appropriate pronouns. Use the example in your book.

Wednesday, April 8

Capítulo 5 - Review the present progressive, reflexive pronouns and object pronouns. Introduction to new vocabulary and write about actions that are in progress at the moment of speaking.

1. **Guided Practice Activity - AVSR**, Sheet 1and 2 *El participio presente* - Write the endings of each verb and fill out the verb chart. Complete the sentences with the appropriate present progressive. Please write out the entire sentence, not just the answer.

2. **Guided Practice Activity AVSR**, Sheet 3 and 4 - *Donde van los pronombres reflexivos y de complemento* - In section A rewrite the phrases in two different ways; section B write the affirmative commands putting an accent on the stressed syllable. Remember that when it is affirmative the pronoun goes at the end of the verb. This is a simple activity that you all have done many times. In section C remember that it is positive so the vowel remains the same using the 3rd person singular form and for section D since it is negative the vowel will change, remember *ar* endings go to *e* and *ir* and *er* endings go to *a*.

3. **Guided Practice Activity** - Vocabulary Flash Cards, Sheet 1 - Introduction to new vocabulary having to do with different careers. As usual, write the spanish vocabulary word below each picture.

Thursday, April 9

Capítulo 5 - Trabajo y Comunidad: Job and volunteerism vocabulary. Read and understand information about getting a job, skills and abilities needed to perform a job and interviewing techniques.

1.**Core Practice 5-1** - **A ver si recuerdas** *En que están trabajando?* A friend asks you who is doing what jobs and you respond in a complete sentence. Follow the example.

2.**Core Practice 5-2** - **A ver si recuerdas** *Hay mucho que hacer*. Section A, write a present progressive sentence using the appropriate pronoun. In section B, write commands with the appropriate pronoun.

3.**Textbook p. 214-215** Vocabulario en contexto 1 - *Estas buscando trabajo?* Read both pages for comprehension then translate the paragraph and vocabulary on page 214 then go to page 215 and translate the short paragraphs under each picture. The new vocabulary can be found on p. 252.

El participio presente (p. 209)

- The present participle is used to talk about actions that are in progress at the moment of speaking. To form the present participle of -ar verbs, add -ando to the stem. For -er and -ir verbs, add -iendo to the stem.

  cantar: cantando insistir: insistiendo tener: teniendo

- The present participle is frequently combined with the present tense of estar to talk about what someone *is doing*, or with the imperfect of estar to talk about what someone *was doing*.

  Estoy cortando el césped.　　　　　*I am mowing the lawn.*

  Los niños estaban haciendo sus quehaceres.　*The kids were doing their chores.*

A. Write the ending of the present participle for each of the following verbs to say what the following people are doing while you're at school. Follow the model.

Modelo　(sacar)　El fotógrafo está sac_ando_ fotos.

1. (trabajar)　El agente de viajes está trabaj_____ en su oficina.

2. (beber)　El entrenador está beb_____ agua.

3. (hacer)　El científico está hac_____ un experimento.

4. (escribir)　El reportero está escrib_____ un artículo.

- Only -ir stem-changing verbs change in the present participle. In the present participle, the e changes to i and the o changes to u.

  servir: sirviendo dormir: durmiendo despedir: despidiendo

B. Write the present participles of the verbs in the chart below. The first row has been done for you. Remember that -ar and -er stem-changing verbs have <u>no stem changes</u> in the present participle.

-ar, -er	present participle	-ir	present participle
jugar	*jugando*	divertir	*divirtiendo*
sentar	1. _____	sentir	5. _____
contar	2. _____	morir	6. _____
volver	3. _____	preferir	7. _____
perder	4. _____	dormir	8. _____

C. Complete the sentences with the present progressive of the verb given (+ *present participle*) to say what the following people are doing. Follow the model.

| Modelo | (**decir**) Yo _*estoy*_ _*diciendo*_ la verdad.

1. (**dormir**) Tú no _____ _____.

2. (**pedir**) Ellos no _____ _____ una pizza.

3. (**contar**) Nosotros _____ _____ chistes.

4. (**resolver**) Yo _____ _____ problemas de matemáticas.

- A spelling change occurs in the present participle of the verbs **ir, oír,** and verbs ending in **-aer, -eer,** and **-uir.** The ending becomes **-yendo.**

  creer: cre**yendo**   oír: o**yendo**   caer: ca**yendo**
  construir: constru**yendo**   ir: **yendo**

D. Complete the following sentences with the present progressive. Remember to use the verb **estar** along with the verb provided. Follow the model.

| Modelo | Mis padres _*están*_ _*trayendo*_ (**traer**) el perro al veterinario.

1. El asistente _____ _____ (**oír**) las instrucciones del dentista.

2. La reportera dice que _____ _____ (**caer**) granizo y que _____ _____ (**destruir**) los coches de muchas personas.

3. Las vendedoras _____ _____ (**leer**) las etiquetas de la ropa.

4. Nadie _____ _____ (**creer**) lo que dice el atleta egoísta.

- In the progressive tenses, reflexive or object pronouns can be placed before the verb **estar,** or they can be attached to the end of the present participle. If they are attached to the present participle, a written accent is needed to maintain stress (usually over the third-to-last vowel).

  El bombero está ayudándome.   or   *El bombero **me** está ayudando.*

E. The sentences below each have a phrase using the present progressive tense and a pronoun. Each phrase is underlined. In the space provided, write the phrase in a different way, using what you learned about placement of pronouns. Follow the model.

| Modelo | No puedo hablar porque <u>me estoy cepillando</u> los dientes. _*estoy cepillándome*_

1. Mis abuelos <u>nos están felicitando</u> por la graduación. _____

2. A Juan no le gusta el postre, pero <u>está comiéndolo</u>. _____

3. Mi hermano está en el baño. <u>Está lavándose</u> las manos. _____

4. Mi profesora <u>me está dando</u> este libro para estudiar. _____

Dónde van los pronombres reflexivos y de complemento (p. 211)

- Deciding where to put object and reflexive pronouns can sometimes be confusing. Here is a summary of some of these rules.
- When a sentence contains two verbs in a row, as with a present participle or infinitive, the pronoun may be placed either in front of the first verb or be attached to the second verb. Note that the second example is negative.

  Nos vamos a duchar.   or   *Vamos a ducharnos.*

  *No **nos** vamos a duchar.*   or   *No vamos a duchar**nos**.*

- Adding a pronoun to the end of a present participle requires a written accent mark, while adding a pronoun to the end of an infinitive does not.

  Estoy pagándole.   *Voy a pagarle.*

A. Rewrite each phrase using the pronoun in parentheses in two different ways. In column A, place the pronouns before the first verb. In column B, attach them to the second verb. Remember, if you add a pronoun to the end of a present participle, you need to include an accent mark. Follow the model.

		A	B
Modelo	van a regalar (me)	*me van a regalar*	*van a regalarme*
1.	vamos a dar (le)		
2.	debo encontrar (lo)		
3.	estamos registrando (nos)		
4.	van a dormir (se)		

- When you give an affirmative command, you must attach any pronouns to the end of the verb and add an accent mark if the verb has two or more syllables.

  Permítelo.   *Ganémoslas.*

  In negative commands, place the pronoun between **no** and the verb. No written accent mark is needed.

  *No **lo** hagan.*   *No **te** laves el pelo ahora.*

B. Combine the following affirmative commands and pronouns. Remember to write an accent mark on the stressed syllable. Follow the model.

Modelo   lava + te = _____*lávate*_____

1. ponga + se = _____   4. ayuden + me = _____
2. vean + los = _____   5. consigamos + la = _____
3. despierten + se = _____

C. For each question, write an answer using one of the affirmative **tú** commands with the correct direct object pronoun (**lo, la, los, las**). Use the word bank to help you choose the correct forms. Add accents as needed. Follow the model.

haz	pide	~~cocina~~	enciende	trae	pon

Modelo ¿Cocino el pavo? Sí, _____*cocínalo*_____.

1. ¿Enciendo las velas? Sí, _____.

2. ¿Pido unas flores? Sí, _____.

3. ¿Hago el menú? Sí, _____.

4. ¿Pongo la mesa? Sí, _____.

5. ¿Traigo una botella de vino? Sí, _____.

D. Write the negative command that corresponds to each affirmative command below. Follow the model.

Modelo Córtense las uñas. No __*se*_ __*corten*__ el pelo.

1. Vístanse con la ropa suya. No _____ _____ con la ropa de sus amigos.

2. Pónganse las chaquetas. No _____ _____ las joyas.

3. Báñense por la tarde. No _____ _____ por la mañana.

4. Levántense a las ocho. No _____ _____ tarde.

5. Cepíllense los dientes. No _____ _____ los dedos.

Write the Spanish vocabulary word below each picture. If there is a word or phrase, copy it in the space provided. Be sure to include the article for each noun.

SECRETARIO (A)
RECEPCIONISTA

_____

_____

_____ ,

_____

Deportes
Urbina

_____

_____

_____

_____ ,

_____

_____

_____

_____

_____

_____ ,

_____

agradable

_____

A ver si recuerdas . . .

¿En qué están trabajando?

Un amigo te pregunta quiénes están haciendo varios trabajos. Responde sus preguntas con frases completas.

Modelo   ¿Quién enseña una clase?

La profesora está enseñando una clase. _____

1. ¿Quién saca fotos?

   _____

2. ¿Quién apaga el incendio?

   _____

3. ¿Quién investiga el crimen?

   _____

4. ¿Quién sirve comida en el restaurante?

   _____

5. ¿Quién te ayuda a planear un viaje?

   _____

6. ¿Quién le dice al atleta lo que tiene que hacer?

   _____

7. ¿Quién habla en el programa de radio?

   _____

8. ¿Quién te limpia los dientes?

   _____

A ver si recuerdas . . .

Hay mucho que hacer

A. Sara está diciéndoles a sus hermanitos que hagan los quehaceres, pero ellos ya están haciéndolos. Escribe las respuestas de sus hermanitos usando los pronombres apropiados.

> **Modelo**   José, recoge la basura del césped.
>
> _____*Ya la estoy recogiendo.*_____ (o) _____*Ya estoy recogiéndola.*_____

1. José y María, laven el coche.

_____ (o) _____

2. María, limpia los baños.

_____ (o) _____

3. María y José, paseen al perro.

_____ (o) _____

4. José, pasa la aspiradora en la sala.

_____ (o) _____

B. Luis es director de cine y está haciendo una película sobre un terremoto. Usa los pronombres apropiados para escribir los mandatos que les da a los actores.

> **Modelo**   Los detectives deben llevar a las víctimas al hospital.
>
> *Llévenlas al hospital.*

1. Los ancianos deben llamar a la policía.

_____

2. Manuel y Antonia deben comenzar la explosión en el laboratorio.

_____

3. Los médicos no deben abrir el consultorio.

_____

4. Los voluntarios no deben apagar el incendio.

_____

El participio presente (p. 209)

- The present participle is used to talk about actions that are in progress at the moment of speaking. To form the present participle of -**ar** verbs, add -**ando** to the stem. For -**er** and -**ir** verbs, add -**iendo** to the stem.

    cantar: cant**ando** insistir: insist**iendo** tener: ten**iendo**

- The present participle is frequently combined with the present tense of **estar** to talk about what someone *is doing*, or with the imperfect of **estar** to talk about what someone *was doing*.

    Estoy cort*ando* el césped.   *I am mowing the lawn.*

    Los niños estaban hac*iendo* sus quehaceres.   *The kids were doing their chores.*

A. Write the ending of the present participle for each of the following verbs to say what the following people are doing while you're at school. Follow the model.

Modelo   (sacar) El fotógrafo está sac___*ando*___ fotos.

1. **(trabajar)** El agente de viajes está trabaj___***ando***___ en su oficina.

2. **(beber)** El entrenador está beb___***iendo***___ agua.

3. **(hacer)** El científico está hac___***iendo***___ un experimento.

4. **(escribir)** El reportero está escrib___***iendo***___ un artículo.

- Only -**ir** stem-changing verbs change in the present participle. In the present participle, the **e** changes to **i** and the **o** changes to **u**.

    servir: s**i**rviendo dormir: d**u**rmiendo despedir: desp**i**diendo

B. Write the present participles of the verbs in the chart below. The first row has been done for you. Remember that -**ar** and -**er** stem-changing verbs have <u>no stem changes</u> in the present participle.

-ar, -er	present participle	-ir	present participle
jugar	*jugando*	divertir	*divirtiendo*
sentar	1. ___**sentando**___	sentir	5. ___**sintiendo**___
contar	2. ___**contando**___	morir	6. ___**muriendo**___
volver	3. ___**volviendo**___	preferir	7. ___**prefiriendo**___
perder	4. ___**perdiendo**___	dormir	8. ___**durmiendo**___

C. Complete the sentences with the present progressive of the verb given (+ *present participle*) to say what the following people are doing. Follow the model.

Modelo   (**decir**) Yo ___*estoy*___ ___*diciendo*___ la verdad.

1. (**dormir**) Tú no ___**estás**___ ___**durmiendo**___.

2. (**pedir**) Ellos no ___**están**___ ___**pidiendo**___ una pizza.

3. (**contar**) Nosotros ___**estamos contando**___ chistes.

4. (**resolver**) Yo ___**estoy resolviendo**___ problemas de matemáticas.

> • A spelling change occurs in the present participle of the verbs **ir**, **oír**, and verbs ending in -**aer**, -**eer**, and -**uir**. The ending becomes -**yendo**.
>
> creer: cre**yendo**   oír: o**yendo**   caer: ca**yendo**
>
> construir: constru**yendo**   ir: **yendo**

D. Complete the following sentences with the present progressive. Remember to use the verb **estar** along with the verb provided. Follow the model.

Modelo   Mis padres ___*están*___ ___*trayendo*___ (**traer**) el perro al veterinario.

1. El asistente ___**está**___ ___**oyendo**___ (**oír**) las instrucciones del dentista.

2. La reportera dice que ___**está**___ ___**cayendo**___ (**caer**) granizo y que ___**está destruyendo**___ (**destruir**) los coches de muchas personas.

3. Las vendedoras ___**están**___ ___**leyendo**___ (**leer**) las etiquetas de la ropa.

4. Nadie ___**está**___ ___**creyendo**___ (**creer**) lo que dice el atleta egoísta.

> • In the progressive tenses, reflexive or object pronouns can be placed before the verb **estar**, or they can be attached to the end of the present participle. If they are attached to the present participle, a written accent is needed to maintain stress (usually over the third-to-last vowel).
>
> *El bombero está ayudándome.*   or   *El bombero me está ayudando.*

E. The sentences below each have a phrase using the present progressive tense and a pronoun. Each phrase is underlined. In the space provided, write the phrase in a different way, using what you learned about placement of pronouns. Follow the model.

Modelo   No puedo hablar porque <u>me estoy cepillando</u> los dientes. ___*estoy cepillándome*___

1. Mis abuelos <u>nos están felicitando</u> por la graduación. ___**están felicitándonos**___

2. A Juan no le gusta el postre, pero <u>está comiéndolo</u>. ___**lo está comiendo**___

3. Mi hermano está en el baño. <u>Está lavándose</u> las manos. ___**Se está lavando**___

4. Mi profesora <u>me está dando</u> este libro para estudiar. ___**está dándome**___

Dónde van los pronombres reflexivos y de complemento (p. 211)

- Deciding where to put object and reflexive pronouns can sometimes be confusing. Here is a summary of some of these rules.
- When a sentence contains two verbs in a row, as with a present participle or infinitive, the pronoun may be placed either in front of the first verb or be attached to the second verb. Note that the second example is negative.

Nos vamos a duchar.	or	Vamos a duchar**nos**.
No **nos** vamos a duchar.	or	No vamos a duchar**nos**.

- Adding a pronoun to the end of a present participle requires a written accent mark, while adding a pronoun to the end of an infinitive does not.

   Estoy pagándo**le**.   Voy a pagar**le**.

A. Rewrite each phrase using the pronoun in parentheses in two different ways. In column A, place the pronouns before the first verb. In column B, attach them to the second verb. Remember, if you add a pronoun to the end of a present participle, you need to include an accent mark. Follow the model.

		A	B
Modelo	van a regalar (me)	_me van a regalar_	_van a regalarme_
1.	vamos a dar (le)	**le vamos a dar**	**vamos a darle**
2.	debo encontrar (lo)	**lo debo encontrar**	**debo encontrarlo**
3.	estamos registrando (nos)	**nos estamos registrando**	**estamos registrándonos**
4.	van a dormir (se)	**se van a dormir**	**van a dormirse**

- When you give an affirmative command, you must attach any pronouns to the end of the verb and add an accent mark if the verb has two or more syllables.

   Permíte**lo**.   Ganémos**las**.

In negative commands, place the pronoun between **no** and the verb. No written accent mark is needed.

   No **lo** hagan.   No **te** laves el pelo ahora.

B. Combine the following affirmative commands and pronouns. Remember to write an accent mark on the stressed syllable. Follow the model.

Modelo lava + te = ___ *lávate* ___

1. ponga + se = ___ **póngase** ___   4. ayuden + me = ___ **ayúdenme** ___
2. vean + los = ___ **véanlos** ___   5. consigamos + la = ___ **consigámosla** ___
3. despierten + se = ___ **despiértense** ___

C. For each question, write an answer using one of the affirmative **tú** commands with the correct direct object pronoun (**lo, la, los, las**). Use the word bank to help you choose the correct forms. Add accents as needed. Follow the model.

haz	pide	~~cocina~~	enciende	trae	pon

Modelo ¿Cocino el pavo? Sí, _____*cocínalo*_____.

1. ¿Enciendo las velas? Sí, _____**enciéndelas**_____.

2. ¿Pido unas flores? Sí, _____**pídelas**_____.

3. ¿Hago el menú? Sí, _____**hazlo**_____.

4. ¿Pongo la mesa? Sí, _____**ponla**_____.

5. ¿Traigo una botella de vino? Sí, _____**tráela**_____.

D. Write the negative command that corresponds to each affirmative command below. Follow the model.

Modelo Córtense las uñas. No _*se*_ _*corten*_ el pelo.

1. Vístanse con la ropa suya. No _**se**_ _**vistan**_ con la ropa de sus amigos.

2. Pónganse las chaquetas. No _**se**_ _**pongan**_ las joyas.

3. Báñense por la tarde. No _**se**_ _**bañen**_ por la mañana.

4. Levántense a las ocho. No _**se**_ _**levanten**_ tarde.

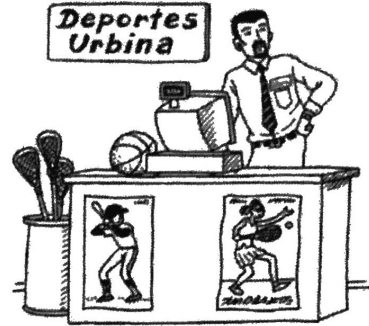5. Cepíllense los dientes. No _**se**_ _**cepillen**_ los dedos.

Write the Spanish vocabulary word below each picture. If there is a word or phrase, copy it in the space provided. Be sure to include the article for each noun.

_el_ _anuncio_ _clasificado_	_el_ _cliente_ , _la_ _clienta_	_el/la_ _gerente_
_el_ _mensajero_ , _la_ _mensajera_	_el/la_ _recepcionista_	_el_ _repartidor_ , _la_ _repartidora_
_el/la_ _salvavidas_	_el_ _niñero_ , _la_ _niñera_	**agradable** _agradable_

148 *Guided Practice Activities* — *Vocabulary Flash Cards 5*

Capítulo 5

A ver si recuerdas . . .

¿En qué están trabajando?

Un amigo te pregunta quiénes están haciendo varios trabajos. Responde sus preguntas con frases completas.

Modelo ¿Quién enseña una clase?

La profesora está enseñando una clase.

1. ¿Quién saca fotos?

   El (La) fotógrafo(a) está sacando fotos.

2. ¿Quién apaga el incendio?

   El (La) bombero(a) está apagando el incendio.

3. ¿Quién investiga el crimen?

   El (La) detective está investigando el crimen.

4. ¿Quién sirve comida en el restaurante?

   El (La) camarero(a) está sirviendo comida en el restaurante.

5. ¿Quién te ayuda a planear un viaje?

   El (La) agente de viajes me está ayudando a planear un viaje.

6. ¿Quién le dice al atleta lo que tiene que hacer?

   El (La) entrenador(a) le está diciendo al atleta lo que tiene que hacer.

7. ¿Quién habla en el programa de radio?

   El (La) locutor(a) está hablando en el programa de radio.

8. ¿Quién te limpia los dientes?

   El (La) dentista me está limpiando los dientes.

Capítulo 5

A ver si recuerdas . . .

Hay mucho que hacer

A. Sara está diciéndoles a sus hermanitos que hagan los quehaceres, pero ellos ya están haciéndolos. Escribe las respuestas de sus hermanitos usando los pronombres apropiados.

Modelo José, recoge la basura del césped.

Ya la estoy recogiendo. (o) _Ya estoy recogiéndola._

1. José y María, laven el coche.

   Ya lo estamos lavando. (o) _Ya estamos lavándolo._

2. María, limpia los baños.

   Ya los estoy limpiando. (o) _Ya estoy limpiándolos._

3. María y José, paseen al perro.

   Ya lo estamos paseando. (o) _Ya estamos paseándolo._

4. José, pasa la aspiradora en la sala.

   Ya la estoy pasando. (o) _Ya estoy pasándola._

B. Luis es director de cine y está haciendo una película sobre un terremoto. Usa los pronombres apropiados para escribir los mandatos que les da a los actores.

Modelo Los detectives deben llevar a las víctimas al hospital.

Llévenlas al hospital.

1. Los ancianos deben llamar a la policía.

   Llámenla.

2. Manuel y Antonia deben comenzar la explosión en el laboratorio.

   Comiéncenla en el laboratorio.

3. Los médicos no deben abrir el consultorio.

   No lo abran.

4. Los voluntarios no deben apagar el incendio.

   No lo apaguen.

National Spanish Examinations
Virtual Lesson Plans

NOTE: Please check back throughout this week, as we will be adding more lesson plans.

In order to provide teachers with resources to help students prepare for the National Spanish Examinations, the test development committee has developed the following lesson plans for use virtually.

Classes to Prepare for the National Spanish Examinations

Class 1 – Identifying Areas of Strength and Weakness in Vocabulary and Grammar
Class 2 – Practicing Areas of Weakness in Vocabulary
Class 3 – Practicing Areas of Weakness in Grammar
Class 4 – Identifying Areas of Strength and Weakness in Reading and Listening

Class 51 – Identifying the Main Idea in Listening
Class 52 – Extracting a Supporting Detail in Listening
Class 53 – Making an Inference in Listening

Classes to Support Specific Learning Objectives

Structures – Beginning Levels

Nouns
    Class 110 – Gender of Nouns
    Class 115 – Making Nouns Plural
    Class 150 – Possession of Nouns
Adjectives
    Class 205 – Agreement of Adjectives
    Class 215 – Possessive Adjectives-Short Forms
Verbs in the Present Tense
    Class 301 – Formation of the Present Tense of Regular Verbs
    Class 304 – Formation of the Present Tense of Stem-Changing Verbs (e → ie)
    Class 305 – Formation of the Present Tense of Stem-Changing Verbs (o → ue)
    Class 306 – Formation of the Present Tense of Stem-Changing Verbs (e → i)
    Class 308 – Formation of the Present Tense of Verbs with Irregular Yo Forms
    Class 309 – Formation of the Present Tense of Irregular Verbs
    Class 310 – Mastery of the Present Tense
    Class 333 – The Immediate Future (ir + a + infinitive)
    Class 355 – The Present Progressive
    Class 391 – Verbs that Mean "To Be" (ser / estar)

Structures – Intermediate Levels

Adjectives and Pronouns
Class 225 – **Demonstrative Adjectives and Pronouns**
Class 260 – **The Past Participle Used as an Adjective**
Class 265 – **Nominalization of Adjectives**
Class 520 – **Direct and Indirect Objects Used Together**
Class 550 – **Possessive Pronouns and Possessive Adjectives (Long Forms)**

Suffixes
Class 175 – **The noun suffix -ito**
Class 275 – **The adjective suffix -ísimo**
Class 405 – **The adverb suffix -mente**

Word Study
Class 610 – **The prepositions para and por**
Class 710 – **The conjunctions pero and sino**
Class 913 – **The verbs conocer and saber**

Verbs in the Past Tenses
Class 311 – **Formation of the Preterite Tense of Regular Verbs**
Class 314 – **Formation of Stem-Changing Verbs in the Preterite (e > i and o > u)**
Class 315 – **Formation of Stem-Changing Verbs in the Preterite (i > y)**
Class 316 – **Verbs ending in -car, -gar, -zar in the Preterite**
Class 318 – **Verbs with Irregular Stems in the Preterite**
Class 320 – **Mastery of the Preterite Tense**

Class 321 – **Formation of the Imperfect Tense of Regular Verbs**
Class 323 – **Formation of Irregular Verbs in the Imperfect**

Class 325 – **Preterite vs. Imperfect**

Structures – Advanced Levels

Word Study
Class 112 – **Nouns whose Meaning Change Depending on Gender**
Class 140 – **Other Parts of Speech Used as Nouns**
Class 211 – **Adjectives Whose Meaning Change Depending upon Position**

Connecting Phrases and Sentences
Class 570 – **Relative Pronouns**
Class 705 – **Conjunctions**

Present Subjunctive
Class 361 – **Formation of the Present Subjunctive of Regular Verbs**
Class 362 – **Formation of the Present Subjunctive of Stem-Changing Verbs**
Class 363 – **Formation of the Present Subjunctive of Spelling-Changing Verbs**
Class 364 – **Formation of the Present Subjunctive of Irregular Verbs**
Class 370 – **Mastery of Formation of the Present Subjunctive**

Imperfect Subjunctive
Class 371 – **Formation of the Imperfect Subjunctive of Regular Verbs**
Class 372 – **Sequence of Tenses**
Class 374 – **If Clauses**