Daily Lesson Plans for PreCalculus

Introduction to Trigonometry 4.1-3

Tues-Wed, August 13-14, 2019

Objective: I can describe visualize and describe angles in terms of rotation, measuring them in degrees and radians.

* Housekeeping: things about Ms. Bogart’s class; join Remind, Go to website; Fill in Google Form for Student data/interview
* Supplies, homework, notebook, backpacks, put up phone
* Writing activity: How are angles used in the real world? Describe rotation in the real world. Pi is the ratio of \_\_\_\_ to \_\_\_\_\_ of every circle.
* Floor demonstration: two sides of an angle with string, rotate one side and tape down. Now tape down string on a grid line and construct a circle. Mark off the length of the radius of the circle on the circumference of the circle until you run out of circle. How many times were you able to mark off the radius? (a little over six). So the radius fits on the circumference 2π times. The angle measure (central angle) between two radii that cut off one radius on the circle (arc length = 1 radius)… is called one radian. There are 2π radians in every circle. Half of a circle (180°) = π radians
* Check out textbooks, take home
* Preview from my website – how to find all dates, assignments, and unit plan.

Quiz on the 3rd block over the first part of section 4.1.

Friday, August 17, 2019

I can apply the definition of radians to find complements, supplements, coterminal angles, convert degrees to radians and radians to degrees, and know quadrants.

* Pass out syllabus (facing boards)
* Warm-up: talk about the terminology on the white board (presented in demonstration on first block).
* Face screen: note-taking over all of the terminology and skills that are the basics of radians and degrees. These notes can be found on my website.
* Practice using these skills.
* Worksheet for HW as well as HW#1 from textbook: pp 267-8: 1-4, 8, 11-15, 17, 19, 25-26, 28-29, 33, 35, 37, 40, 43.
* Try textbook login. Did not work.

Tues, August 20, 2019

I can demonstrate mastery over basics of degrees and radians. I can apply concepts of arc length, circumference, distance, radians and degrees to find arc length, angular, speed, and linear speed.

* Warm-up: Get into online textbook. Find Mr. Townsend’s website. Finding resources online, sketches on p 261.
* Warm-up: answer questions: How many degrees in a circle, radians in a circle? (Pi and decimals) What is the circumference of a circle? What is arc length in words (use the word circumference)? What is the arc length of an arc formed by a central angle of 1 radian? (Also copy example of angle in degrees, minutes, seconds.
* Face screen: go over HW and worksheet. Address issue of supplementary and complementary must be positive. How to find Pi – 1/5 as a fraction. How to convert radians to degrees, degrees to radians, regardless of whether Pi is in the value.
* Notes and practice: arc length is just radians times radius (comes from geometry arc length formula only use 2 Pi for the circumference, so AL = angle times radius; angular speed, linear speed. A few examples.
* Quiz 4.1a – 13 pts
* HW #2 – worksheet 6,9,11-12; textbook: pp 267-9: 5, 51, 53, 55, 60, 62-67, 73-74, 78.

Quiz 4.1b next block over arc length, angular speed, and linear speed.

Thursday, August 22, 2019

I can demonstrate mastery over application of arc length, angular speed, and linear speed for angles rotating in radian measure. I can find degrees, radians, and coordinates of all the special points on a unit circle.

* Re-cap: 3 formulas (on white board) – arc length, angular speed, and linear speed. Why now? How connected? How does it relate to prior knowledge in degrees.
* Answers passed out to worksheet and to homework (all worked out)
* Questions answered extensively
* Practice: Changing degrees, minutes and seconds to decimal degrees.
* Unit Circle: degrees, radians, coordinates through 30-60-90 and 45-45-90.
* Fill out the back for homework.
* Quiz 4.1b – 10 pts (just like worksheet)
* Return quiz 4.1a – 13 pts

Will take a grade over HW #2 next time.

Next quiz: 4.2 – next Friday, August 30.

There will be a webassign assignment on Wednesday, due Thursday at midnight, to review for quiz 4.2

Monday, August 26

I can apply knowledge of unit circle and trig ratios to discover the reciprocal trig functions and understand about periodic results of coordinates on the unit circle.

* Warm-up: discoveries about the unit circle. See attachment on daily blog.
* Take a grade on HW #2 and the Unit Circle blue sheet – 6 pts
* Answers to warm-up shared and discussed.
* Answers to blue sheet… any questions?
* Notes and practice – 4.2 – the six trig functions, even and odd functions visually and algebraically, know that you can keep rotating radians after 2 Pi; use that to evaluate coordinates at radians higher than 2 Pi.

### HW #3 - Pages 275-276, Vocabulary Check #s: 1 and 3. Exercise #s: [7](https://youtu.be/bvamj9xSa-E), 9, 11, 13, 15, 19, [23](https://www.youtube.com/watch?v=SnR2HNVs2ek), 26, [29](https://www.youtube.com/watch?v=Rq4rVV_6r40), [31](https://www.youtube.com/watch?v=1v9QwK5SNbg), 33, [36](https://www.youtube.com/watch?v=bn9DiN8mD7k), [37](https://www.youtube.com/watch?v=QL1fLcA7U0U), 38-41, [42](https://www.youtube.com/watch?v=y3QT6h9rUoM), 43, 45, [47](https://www.youtube.com/watch?v=rHEF0mI2cds), 48, [51](https://www.youtube.com/watch?v=Jlgu8pBVKlk), 53, and [54](https://www.youtube.com/watch?v=02Lb4DzBq-I).

* Pass out Worksheet 4.2A. Complete worksheet and textbook work for HW.
* Time to work in class.
* Quiz next time for mastery: degrees, coordinates, and radians for five different terminal rays on the unit circle. – 20 pts

Wednesday, August 28

I can demonstrate mastery over special degrees, radians, and coordinates from 0-360 on unit circle. I can apply concepts related to angles and definitions of trig ratios (functions) to solve problems.

* Warm-up: (on board) review of section 4.1 with focus on how to convert degrees, minutes, seconds to a decimal degree
* Take a grade on HW #3 plus review worksheet – 5 pts
* Answers to review on board; check, questions
* Answers to HW on screen, go over, ask questions.
* Answers to worksheet 4.2A on screen; questions.
* Work on webassign 4.1-2 in class
* Pass out worksheet 4.2B, due Friday.
* Collect syllabus, supplies.

Quiz Friday (like worksheet) – 25 pts

Friday, August 30, 2019

I can demonstrate mastery over definitions of trig functions. I can define the 6 trig ratios for right triangles and determine their values in any right triangle. I can apply 30,60, 90 and 45,45,90 shortcuts to find missing sides of right triangles.

* Check worksheet/question/collect stuff
* Quiz 4.2 – 25 pts
* Read pp 620-622 from Geometry book, record chart on p 620 into notebook.
* Add to chart: cosecant, secant, and cotangent ratios.
* Do 7-9 on p 625 of geometry book/ share and check
* Notes from board: 30-60-90, 45-45-90, looking for hypotenuse first to see if it is a unit circle right triangle or just any right triangle.
* HW #4: pp Pages 284-287, Vocabulary Check #s: 1, 2 and 4. Exercise #s: 5, 7, 11, 15, 17, 23-28, 38-40, 53, 55, 57, 59
* Work on homework in class with a partner.
* Webassign discussion – why am I missing questions.

Wednesday, September 4, 2019

I can identify trig ratios in a right triangle and use them to discover that sine of acute angle is the same as cosine of its complement, etc. I can apply trig ratios and write equations to solve for missing parts of a right triangle. I can understand the idea of trig identities and be able to recall them.

* Warm-up: In a graphed right triangle with x-coordinate of “u” and y-coordinate of “v” and hypotenuse of 6, write the value of the six trig functions. Then write the value of their complements. (the other acute angle in the triangle).
* Warm-up: read examples from old textbook and do: p 583:5, p 625: 14-16.
* Take a grade over HW #4.
* Go over HW in detail, answer questions. Answers to warm-up given, any questions?
* Use warm-up to go to cofunction identities.
* Notes: trig identities.
* Suggestions for trig ratio (calculator based) problems on HW.
* Know trig identities from p 280, the warm-up, and the notes for a quick knowledge based quiz during the next block (before lunch).
* HW #5 – pp 285-6: 63-67, 74-75, 77-78, 82.

Trig Identity Basics Quiz next block.

Webassign that is on your online textbook website is not due until Sept 11.

Friday, September 6, 2019

I can demonstrate mastery over basic trig identities. I can use them to prove more complicated trig identities.

* 5 minutes to make sure you know your identities.
* Take a quick grade over HW #5 – 4 pts
* Answers handed out to HW #5.
* Questions over HW or identities.
* Basic Identities Quiz
* Identities Workshop – do 4 from textbook. Then try first 8 on basics worksheet. 2 examples of more difficult one, now finish basic worksheet. Once you are finished and feel that your work is good, try the front of the more difficult sheet. A couple of hints were given. Finish front of worksheet for HW. Do back if confident.
* Webassign 4.3 review is due Wed, 9/11 at 11:59 pm.
* A review worksheet for the quiz will be given Tuesday in class for classwork and homework. The identity sheet will be finished in class on Tuesday.
* 4.3 Quiz will have to wait until 9/16 (Monday) because of juniors and seniors being gone on 9/12.
* Big Test over whole unit on 9/18 (Wednesday). Another webassign will be given for review.

Tuesday, Sept 10, 2019

(No plan for Sept 12 due to Aspire testing and 21 absences from this class)

I can apply basic trig identities to prove more complicated trig identities using strategies.

* Warm-up on board: rearrange Pythagorean Identities (like solve for sine^2, etc) and factor in order to be able to see patterns in indentities that can help with proofs. Attached to blog post with answers.
* Return quizzes 4.2
* Answers to “basic identities” worksheet on screen.
* How to do #8 on the front of harder worksheet.
* Work on back with a partner.
* Self check some along the way.
* Work on webassign due Sept 11 at 11:59 pm in class.
* Hand out Unit Review A – due Monday
* Quiz Monday Sept 16 over 4.3
* Test Wed, Sept 18 over 4.1-3 entire unit.
* Website updated for assistance, and check Mr. Townsend’s website.

Monday, Sept 16, 2019

I can demonstrate mastery over 4.3 – missing sides and angles in triangles, trig identities, etc.

* Answers to back of Trig Identities worksheet on screen, go over #9. Questions.
* Answers to first page of first Unit Review on screen.
* Part 1 of quiz (calculator allowed)
* After lunch – Part 2 of quiz (no calculator allowed)
* Work on 1st &/or 2nd unit review.
* Hints for test next block: answers are posted on Mr. Townsend’s website; I posted answers to 2nd review on my website. Work and check!
* Topic list to be posted!

Test Wed, Sept 18, 2019 – 100 pts!!!!! Study for this

Help available Tuesday morning at 8:15 in my room.

Wednesday, Sept 18, 2019

I can demonstrate mastery over basics of trigonometry (4.1-3).

* Return quizzes 10.3
* Questions over reviews and quizzes answered.
* Turn in both reviews and last identity worksheet 1-16 – 10 pts
* Unit Test – 100 pts