

Today's Plan:

Learning Target (standard): I will describe real-world functions.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

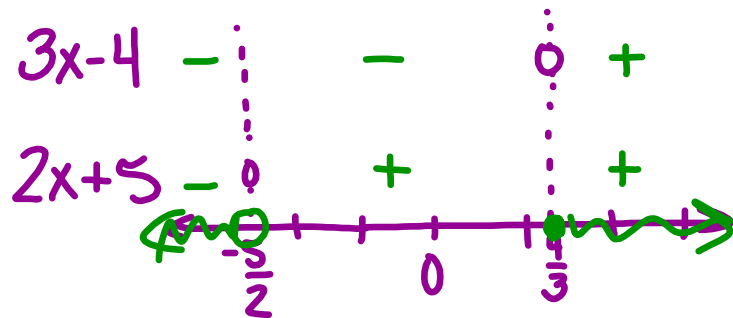
Assessment: Board work, homework check and homework assignment

Differentiation: Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

Find the domain of the given function:

$$f(x) = \sqrt{\frac{3x-4}{2x+5}}$$

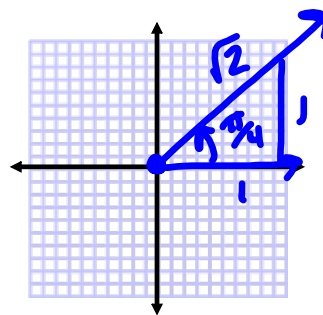
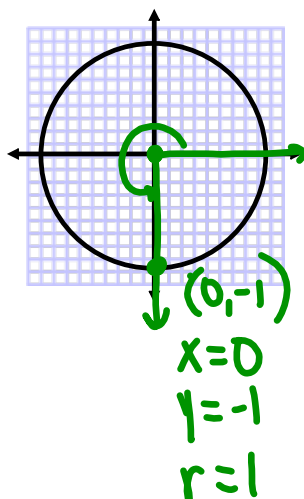
$$\frac{3x-4}{2x+5} \geq 0$$



$$D: \left\{ x \mid x < -\frac{5}{2}, x \geq \frac{4}{3} \right\}$$

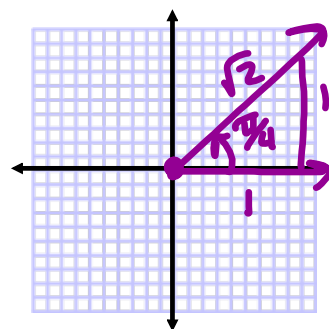
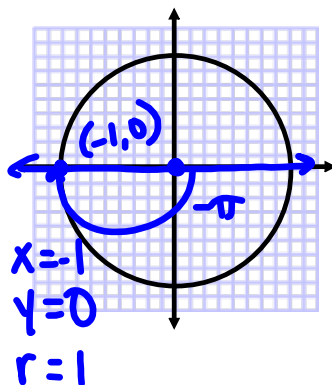
Evaluate.

$$\begin{aligned} & \sin \frac{3\pi}{2} + \cos \frac{\pi}{4} \\ &= -1 + \frac{\sqrt{2}}{2} \\ &= \frac{-2 + \sqrt{2}}{2} \end{aligned}$$



Evaluate.

$$\begin{aligned} & \tan(-\pi) + \sec^2 \frac{\pi}{4} \\ &= 0 + (\sqrt{2})^2 \\ &= 2 \end{aligned}$$



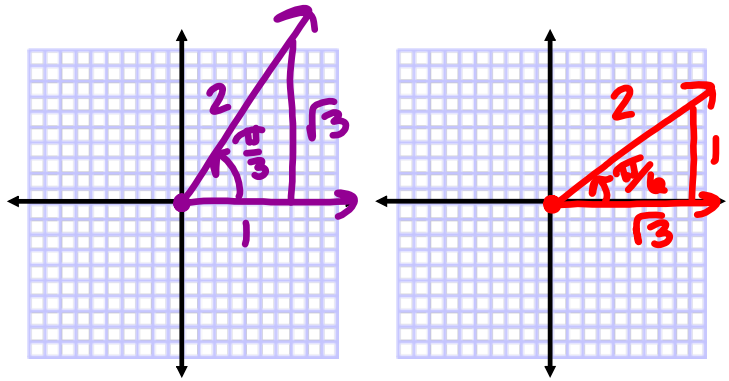
Evaluate.

$$2 \cot\left(\frac{\pi}{3}\right) + \cos^2 \frac{\pi}{6}$$

$$= 2\left(\frac{\sqrt{3}}{3}\right) + \left(\frac{\sqrt{3}}{2}\right)^2$$

$$= \frac{2\sqrt{3}}{3} + \frac{3}{4}$$

$$= \frac{8\sqrt{3} + 9}{12}$$



Write using transformations. Determine the domain and range.

$$f(x) = -\frac{1}{2} \left| \frac{1}{2}x - 2 \right| + 3$$

parent: $f(x) = |x|$

1) $f(x) = -|x|$ r

2) $f(x) = -\frac{1}{2}|x|$ v.c. by $\frac{1}{2}$

3) $f(x) = -\frac{1}{2}|\frac{1}{2}x|$ h.s. by 2

4) $f(x) = -\frac{1}{2}|\frac{1}{2}(x-4)|$ shift right 4

5) $f(x) = \frac{1}{2}|\frac{1}{2}x - 2| + 3$

D: \mathbb{R}

R: $\{y \mid y \leq 3\}$

Find the inverse. State domain and range of both.

$$f(x) = -\frac{3}{x} + 3$$

$$x = -\frac{3}{y} + 3$$

$$x - 3 = -\frac{3}{y}$$

$$y(x - 3) = -3$$

$$y = \frac{-3}{x - 3}$$

$$f^{-1}(x) = \frac{-3}{x - 3}$$

$$\begin{aligned} \text{D: } \{x \mid x \neq 0\} \\ \text{R: } \{y \mid y \neq 3\} \end{aligned}$$

$$\begin{aligned} \text{D: } \{x \mid x \neq 3\} \\ \text{R: } \{y \mid y \neq 0\} \end{aligned}$$

Assignment:

Intermediate Algebra #1-8

* You will have an example and a non-example for each problem - make sure to support these *

Pre-calculus #1-3,5-8

* You can use sentences, equations, diagrams, etc. *

* Don't forget to submit in GC your fun picture and rules & regulations before class tomorrow! *