Today's Plan:

Learning Target (standard): I will review for the semester exam.

Students will: Complete practice problems over previous concepts at the boards and study for my exam.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuarcy and provide students feedback, describe and provide examples of exam problems.

Assessment: Board work

Differentiation: Students will work at the board, actively engage in practice review concepts with the aid of other students and the teacher.

CCP Trigonometry Exam:

- Graph exponential function with transformations
- Graph logarithmic function with transformations
- Expand logarithmic expressions
- Condense logarithmic expressions
- Evaluate logarithmic expressions
- Solve logarithmic & exponential equations

CCP Trigonometry Exam:

- Find positive & negative coterminal angles
- Find the measure of angles from diagrams
- Convert angle measures
- Use the sum & difference identities to evaluate trig expressions
- Graph trig functions using transformations
- Find the 6 trig values of an angle
- Establish trig identities
- Use the Law of Sines and Cosines to solve triangles
- Find the area of oblique triangles
- Convert polar and rectangular coordinates & equations
- Graph polar equations

Convert the polar coordinates to rectangular coordinates. Graph the polar coordinate.

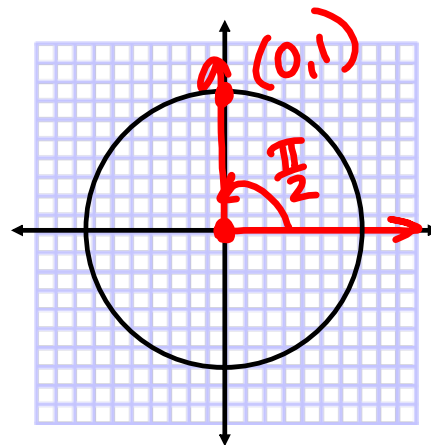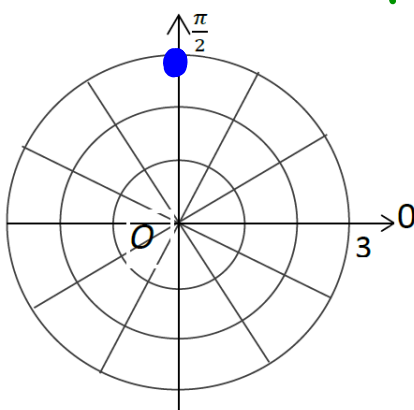$$\left(3, \frac{\pi}{2}\right)$$

$x = r\cos\theta$
$x = 3(0)$
$x = 0$

$y = r\sin\theta$
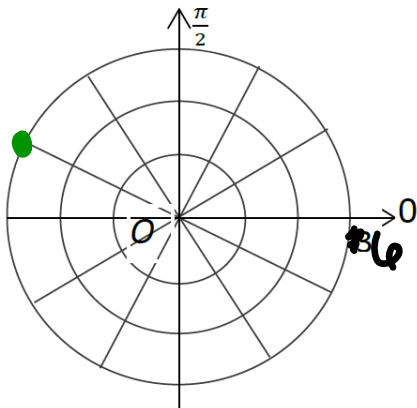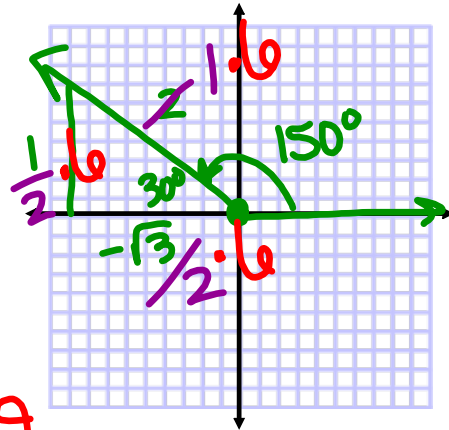$y = 3(1)$
$y = 3$

$(0,3)$

$(0,1)$ $\frac{\pi}{2}$

Convert the polar coordinates to rectangular coordinates. Graph the polar coordinate.

$(6, 150°)$ $x = r\cos\theta$

$x = 6\left(-\dfrac{\sqrt{3}}{2}\right)$

$x = -3\sqrt{3}$

$y = r\sin\theta$

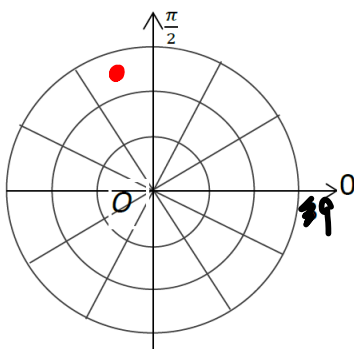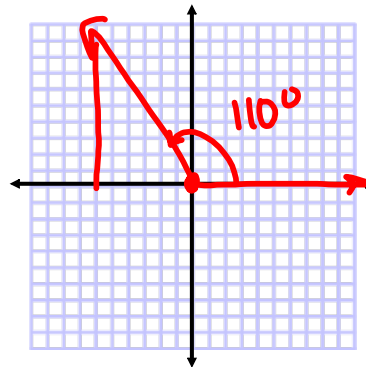$y = 6\left(\dfrac{1}{2}\right)$

$y = 3$

$\left(-3\sqrt{3}, 3\right)$

Convert the polar coordinates to rectangular coordinates. Graph the polar coordinate.

$(7.5, 110°)$

$x = r\cos\theta$

$x = 7.5\cos 110°$

$x = -2.565$

$y = r\sin\theta$

$y = 7.5\sin 110°$

$y = 7.048$

$\left(-2.565, 7.048\right)$

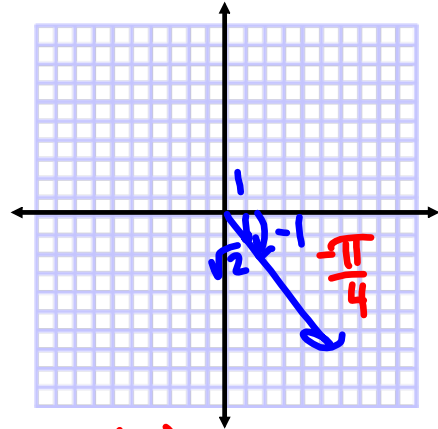Convert the rectangular coordinates to polar coordinates. Graph the polar coordinate.

$(1, -1)$

$r^2 = x^2 + y^2$

$r^2 = (1)^2 + (-1)^2$
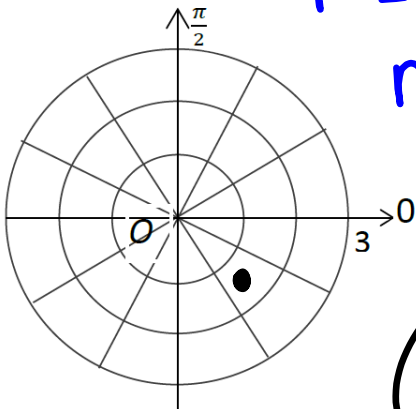
$r^2 = 2$

$r = \sqrt{2}$

$\tan^{-1}\left(-\frac{1}{1}\right) = \theta$

$\theta = -\frac{\pi}{4}$

$\left(\sqrt{2}, -\frac{\pi}{4}\right)$

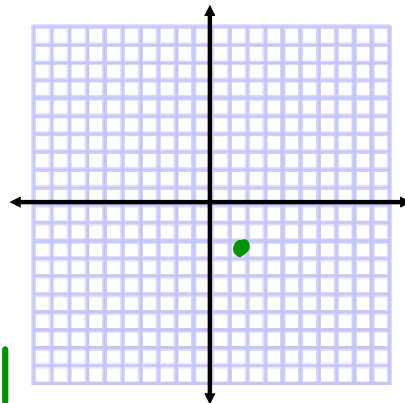Convert the rectangular coordinates to polar coordinates. Graph the polar coordinate.

$(1.3, -2.1)$

$r^2 = x^2 + y^2$
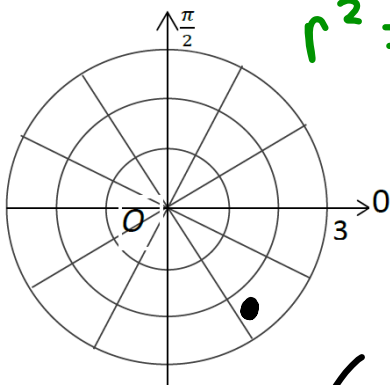
$r^2 = (1.3)^2 + (-2.1)^2$

$r^2 = 1.69 + 4.41$

$r^2 = 6.1$

$r = 2.470$

$\tan^{-1}\left(\frac{-2.1}{1.3}\right) = \theta$

$\theta = -1.016$

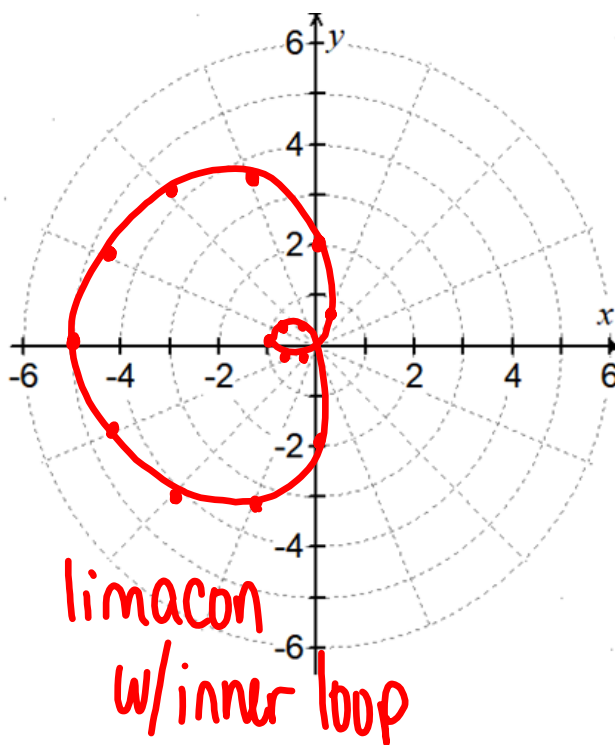$(2.470, -1.016)$

Graph the polar equation.

$$r = 2 - 3\cos\theta$$

θ	r	θ	r
0	-1	π	5
$\frac{\pi}{6}$	-.598	$\frac{7\pi}{6}$	4.598
$\frac{\pi}{4}$	-.121	$\frac{5\pi}{4}$	4.121
$\frac{\pi}{3}$	.5	$\frac{4\pi}{3}$	3.5
$\frac{\pi}{2}$	2	$\frac{3\pi}{2}$	2
$\frac{2\pi}{3}$	3.5	$\frac{5\pi}{3}$	.5
$\frac{3\pi}{4}$	4.121	$\frac{7\pi}{4}$	-.121
$\frac{5\pi}{6}$	4.598	$\frac{11\pi}{6}$	-.598
π	5	2π	-1

limacon
w/ inner loop

Graph using transformations. Find the domain, range and intercepts.

$$f(x) = \log(2x + 10)$$

Parent: $f(x) = \log x$ VA: $x = 0$
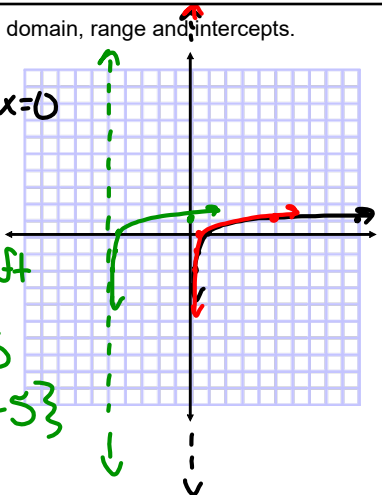
1) $f(x) = \log(2x)$ h.c. by $\frac{1}{2}$

2) $f(x) = \log(2(x+5))$ shift left 5

VA: $x = -5$

$y = \log x$

$10^y = x$

X	Y
$\frac{1}{100}$	-2
$\frac{1}{10}$	-1
1	0
10	1
100	2

D: $\{x \mid x > -5\}$
R: $\mathbb{R}$

I_x: $(-\frac{9}{2}, 0)$

$0 = \log(2x+10)$
$10^0 = 2x + 10$
$1 = 2x + 10$
$-9 = 2x$
$x = -\frac{9}{2}$

I_y: $(0, 1)$

$y = \log(0 + 10)$
$y = \log 10$
$y = 1$

Graph using transformations. State the domain and the range.

4) $y = \dfrac{1}{3} \cdot \left(\dfrac{1}{2}\right)^{x-2} + 2$

parent: $y = \left(\dfrac{1}{2}\right)^x$ HA: $y=0$

1) $y = \dfrac{1}{3} \cdot \left(\dfrac{1}{2}\right)^x$ V.C. by $\dfrac{1}{3}$

2) $y = \dfrac{1}{3} \cdot \left(\dfrac{1}{2}\right)^{x-2}$ shift right 2

3) $y = \dfrac{1}{3} \cdot \left(\dfrac{1}{2}\right)^{x-2} + 2$ shift up 2

HA: $y=2$

D: $\mathbb{R}$

R: $\{y \mid y > 2\}$

X	Y
-2	4
-1	2
0	1
1	$\frac{1}{2}$
2	$\frac{1}{4}$

-2-