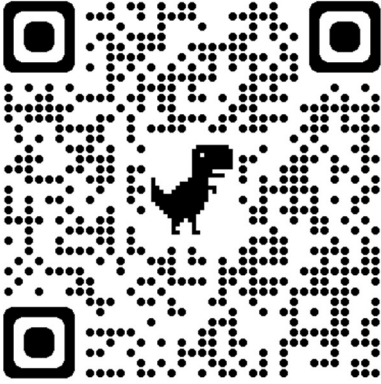


CALC SUMMER HW INSTRUCTIONS

Steve.ledesma@fresnounified.org

1) FACTORING. Complete factoring problems, below are 2 tutorial videos you can watch to help you.



1. $x^2 + 13x - 30$

2. $x^2 - 5x - 24$

3. $x^2 + 5x - 36$

4. $x^2 + 15x + 56$

5. $x^2 + 15x + 54$

6. $x^2 - 8x - 20$

7. $x^2 + 4x - 32$

8. $x^2 - x - 20$

9. $x^2 + 11x + 30$

30. $3x^2 + 2x - 1$

31. $5x^2 - 4x - 1$

32. $2x^2 + 5x - 3$

33. $7x^2 - 13x - 2$

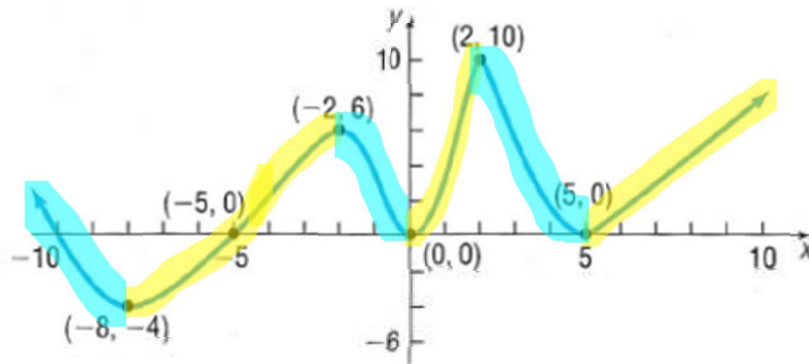
34. $3x^2 + 14x - 5$

35. $4x^2 - 11x + 7$

2) INCREASING/DECREASING/CONSTANT/POSITIVE/NEGATIVE . Complete the 2 intervals problems. Below is a video you can watch to help you.



Increasing/Decreasing/Constant/Positive/Negative



Increasing intervals:

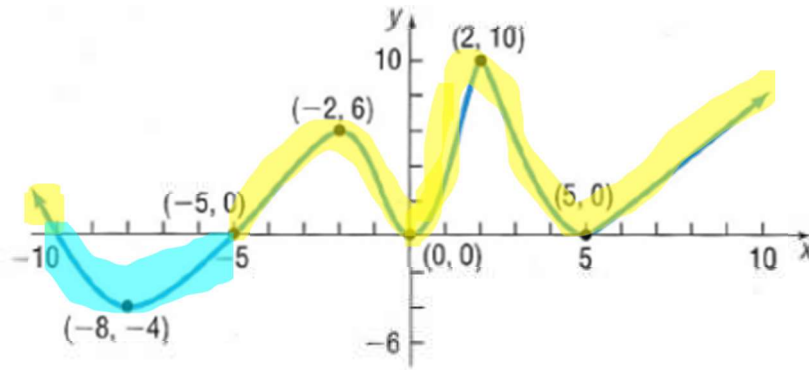
$(-8, -2) \cup (0, 2) \cup (5, \infty)$

Decreasing intervals:

$(-\infty, -8) \cup (-2, 0) \cup (2, 5)$

Constant intervals:

None
(flat)



Intervals where the function is positive ($f(x) > 0$)

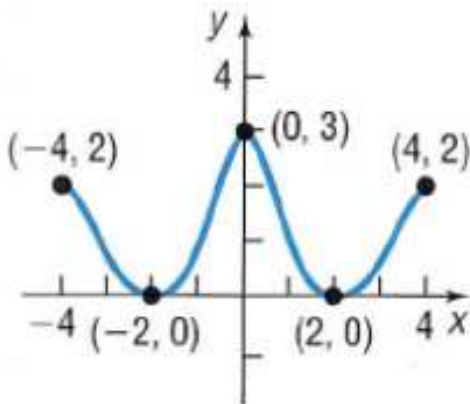
above x-axis

$(-\infty, -10) \cup (-5, 0) \cup (0, 5) \cup (5, \infty)$

Intervals where the function is negative ($f(x) < 0$)

below x-axis

$(-10, -5)$



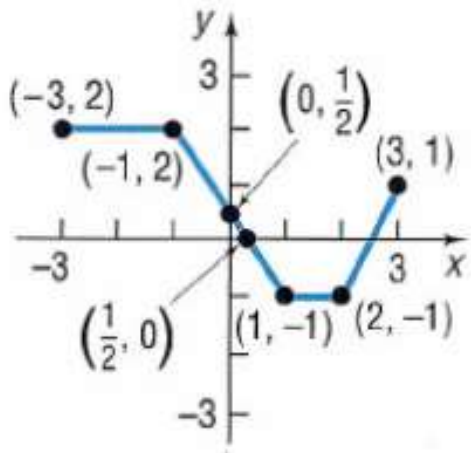
Increasing intervals:

Decreasing intervals:

Constant intervals:

Intervals where the function is positive ($f(x) > 0$)

Intervals where the function is negative ($f(x) < 0$)



Increasing intervals:

Decreasing intervals:






Constant intervals:

Intervals where the function is positive ($f(x) > 0$)




Intervals where the function is negative ($f(x) < 0$)

3) Rational exponents and negative exponents. Use the examples in both tables to complete the rest of the tables.

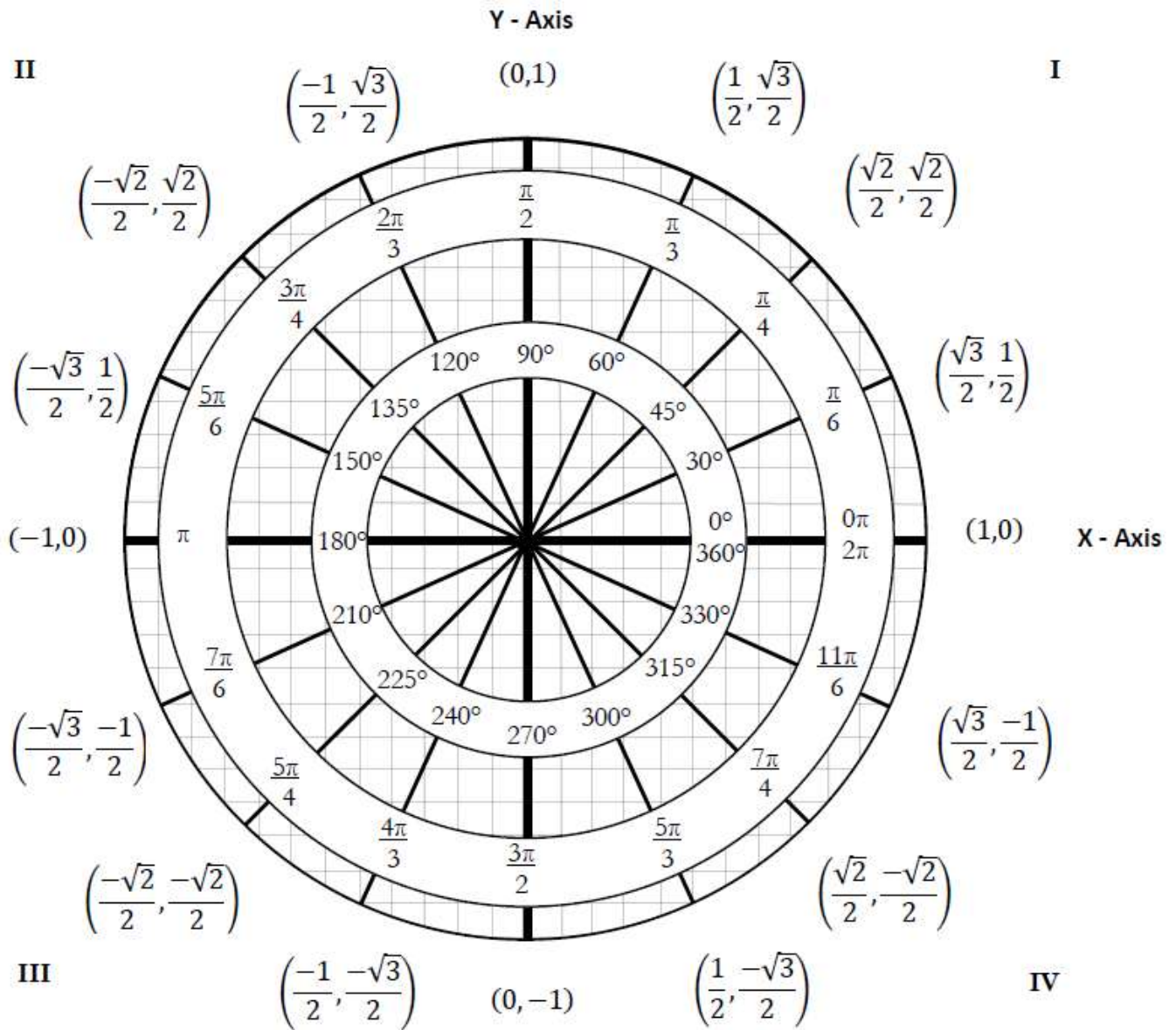
Rational exponents (fraction exponents) can be re-written with radicals and roots. Radicals and roots can be written with rational expressions.

Rational exponent	Root/radical form
$x^{\frac{m}{n}}$ 	$(\sqrt[n]{x})^m$
$8^{\frac{1}{2}}$ 	$\sqrt{8}$
$4x^{\frac{2}{3}}$ 	$(4\sqrt[3]{x})^2$
$8^{\frac{2}{3}}$ 	$(\sqrt[3]{8})^2$
$8^{\frac{1}{2}}$ 	$\sqrt{49}$
$x^{\frac{1}{2}}$	
$3x^{\frac{1}{4}}$	
$x^{\frac{3}{5}}$	
	$4\sqrt[3]{x}$
	$(\sqrt[4]{2x})^3$
	$(\sqrt{x})^3$

Negative exponents can be re-written as positive exponents in the denominator of a fraction

negative exponent	Positive exponent form
x^{-3} 	$\frac{1}{x^3}$
$3x^{-2}$ 	$\frac{3}{x^2}$
$8x^{-\frac{1}{4}}$ 	$\frac{8}{\sqrt[4]{x}}$
x^{-5}	
	$\frac{1}{x^6}$
$2x^{-\frac{2}{5}}$	
	$\frac{4}{\sqrt{x}}$
	$\frac{5}{(\sqrt[3]{x})^2}$
$3x^{-4}$	
	$\frac{-6}{\sqrt[3]{x}}$

4) Unit Circle. Below is a completed Unit Circle. If you have not done so yet, please memorize as much as possible.



Key: (Cos(θ), Sin(θ))

$$\text{Tan}(\theta) = \frac{\text{Sin}(\theta)}{\text{Cos}(\theta)}$$