11/8/ Precalc Quiz 2.0

$$y = \frac{(x-3)(x-5)}{x(x^2-9)} = \boxed{\frac{x^2-8x+15}{x^3-9x}}$$

$$\frac{(x-3)(x-5)}{x(x-3)(x+3)} = \frac{x-5}{x(x+3)}$$

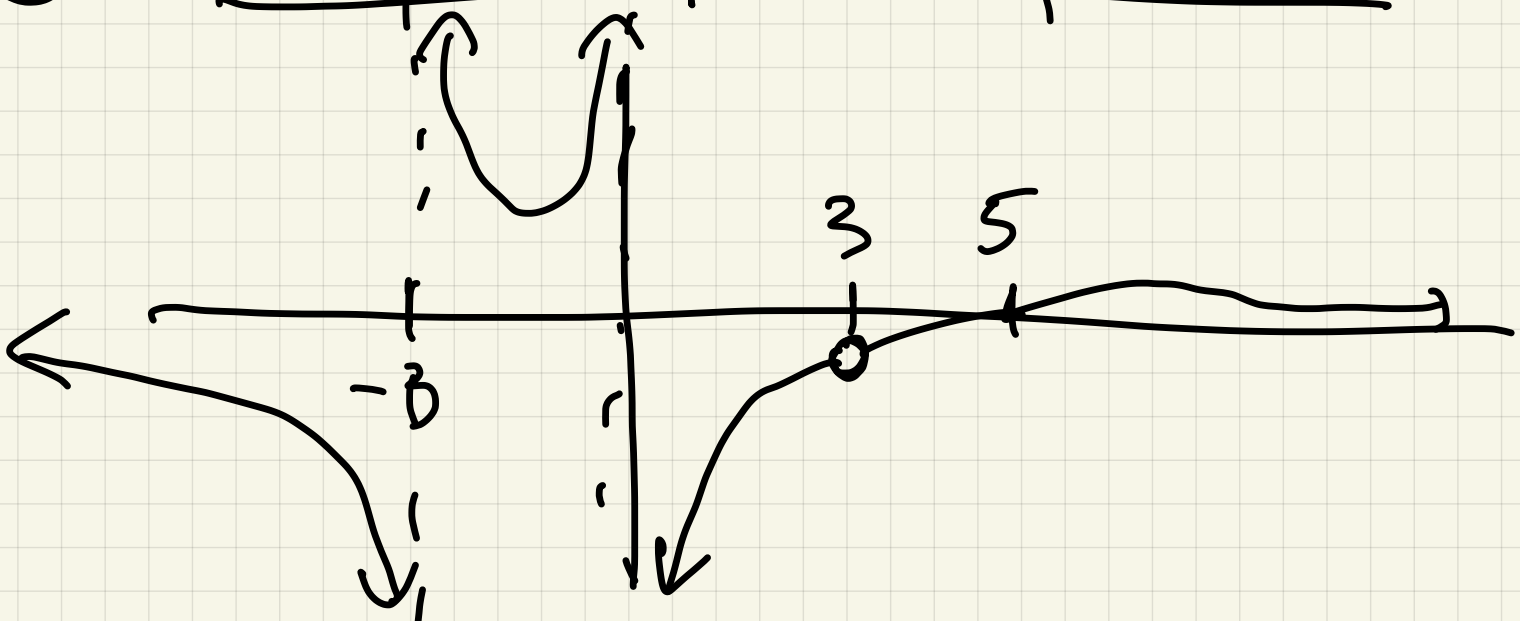
$x(x+3) = 0 \Rightarrow$ VA $x = 0, -3$

① hole $(3, -\frac{2}{18})$

② HA $y = 0$

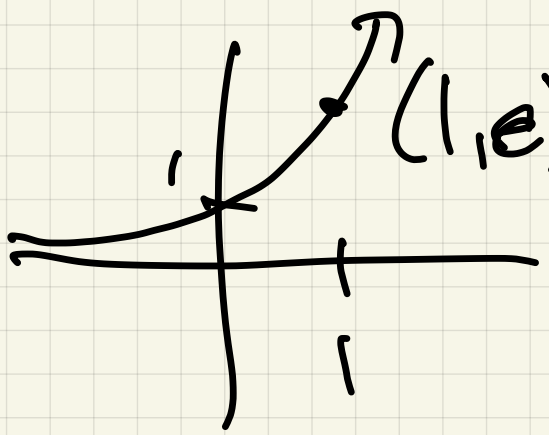
③ x-int : $x = 5$ $(5, 0)$

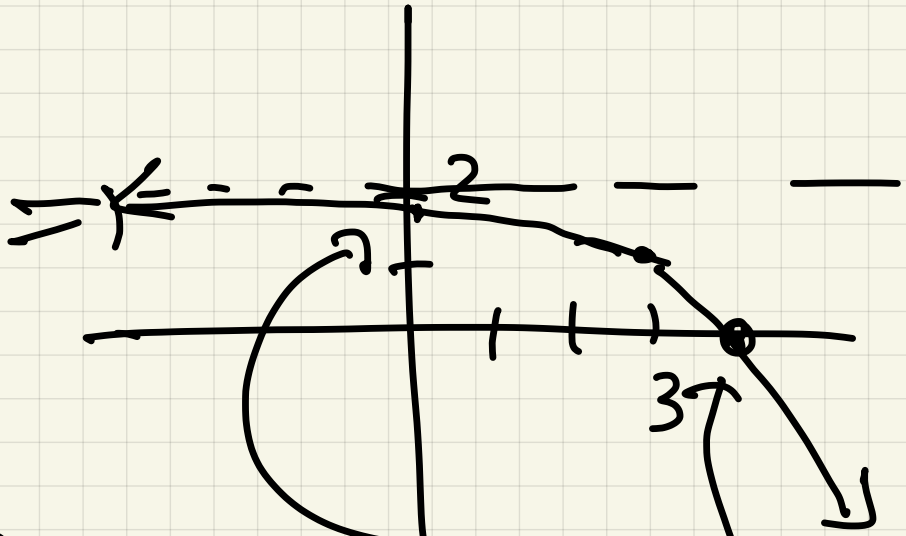
④ $-$ -3 $+$ 0 $-$ 5 $+$



Last time Solving equations

Ex 0 $y = 2 - e^{(x-3)}$





y-int: $x = 0$

$y = 2 - e^{(0-3)} = 2 - \frac{1}{e^3}$

$(0, 2 - \frac{1}{e^3})$

x-int: $y = 0$

$0 = 2 - e^{(x-3)}$

$e^{x-3} = 2 \Rightarrow x - 3 = \ln e^{x-3} = \ln 2$

So $x - 3 = \ln 2$

$x = 3 + \ln 2$

$(3+\ln 2, 0)$

Ex1: Solve

(a) $\ln(x^2-10) = \ln(3x)$

$e^{\ln(x^2-10)} = e^{\ln(3x)}$

$x^2 - 10 = 3x$

$x^2 - 3x - 10 = 0$

$(x-5)(x+2) = 0$

$x = 5, -2$

only 5 only

(b) $\log(x+2) - \log(x-2) = \log x$

$\left(\log_4 x = \log_{10} x\right)$

$$\log_{10}\frac{x+2}{x-2} = \log_{10} x$$

$$\frac{x+2}{x-2} = x$$

$$x+2 = x(x-2)$$

$$= x^2 - 2x$$

$$0 = x^2 - 3x - 2$$

$$= \downarrow\downarrow$$

$$x = \frac{3 \pm \sqrt{9-4(1)(-2)}}{2}$$

$a = 1$
$b = -3$
$c = -2$

$$x \quad \frac{3 \pm \sqrt{17}}{2}$$

$\frac{3+\sqrt{17}}{2}$ $\frac{3-\sqrt{17}}{2}$

check

$$x-2 = \frac{3+\sqrt{17}}{2} - 2 =$$

$$\frac{3+\sqrt{17}-4}{2} = \frac{\sqrt{17}-1}{2}$$

(c) $$\frac{e^{x^2} \cdot e^{12}}{e^{8x}} = 1$$

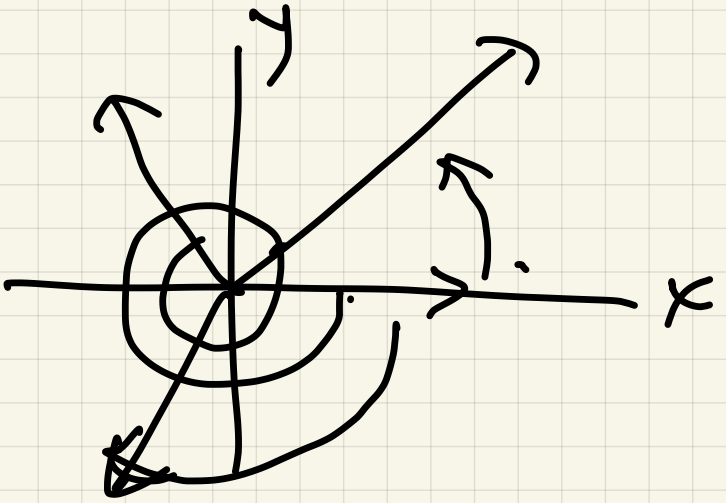
$$\frac{e^{x^2+12}}{e^{8x}} = e^{x^2-8x+12} = 1$$

$$x^2 - 8x + 12 = 0$$

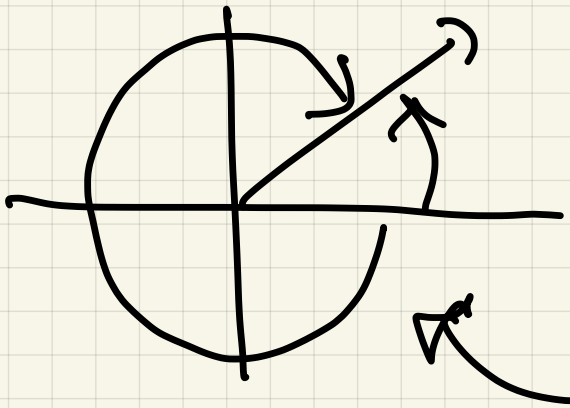
$$(x-2)(x-6) = 0$$

$$x = 2, 6$$

6.1 Angles & measures



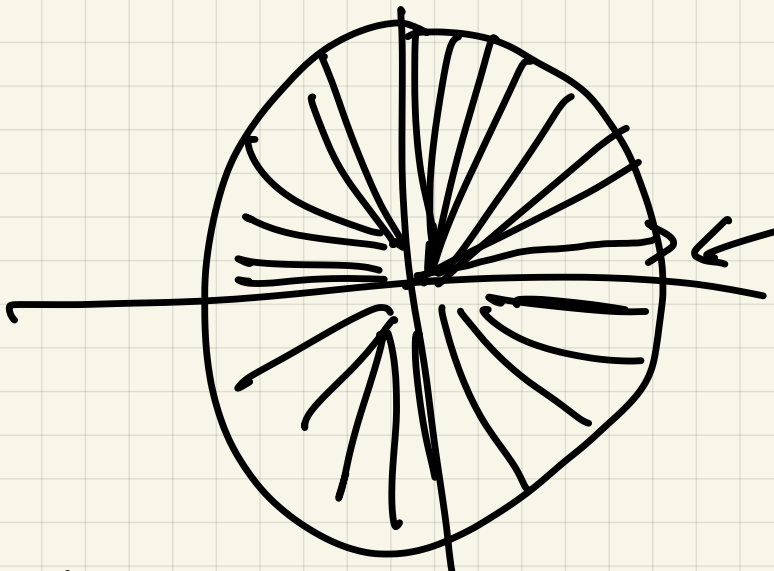
rotate positive x-axis, ray ends at new position



two angles are coterminal if ending ray is same

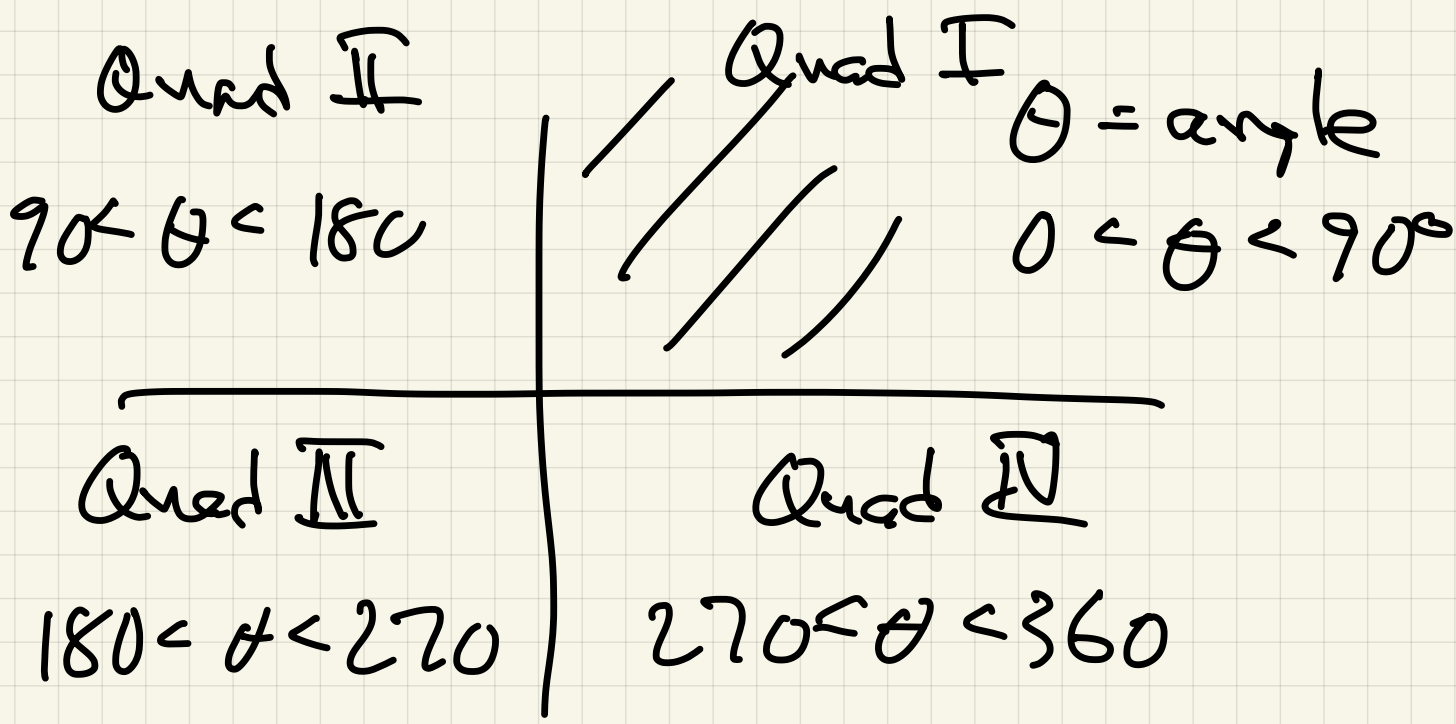
Degrees

one degree $= 1^\circ = \frac{1}{360}$ th of way around circle counterclockwise direction



1 full rotation is 360°

$\frac{1}{2}$ rotation is 180°


Quad II
90 < θ < 180
Quad I
θ = angle
0 < θ < 90°
Quad III
180 < θ < 270
Quad IV
270 < θ < 360

Words