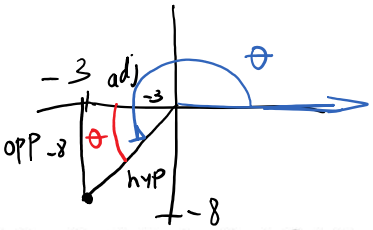
Review #3

June 11, 2019 9:41 AM

Name:_____ Block: _____ Date: _____

PreCalculus 11 Review

1. What is the exact value of tan Θ if (-3, -8) is a point on the terminal arm of the angle?



SOHCAHTOA

$\tan\theta = \frac{opp}{adj} = \frac{-8}{-3} = \frac{8}{3}$

2. What is the discriminate of $-6x^2 + 2x = 4 = 0$? What does it tell you?

$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

b^2-4ac → >0 ⇒ 2 solns

$=0$ ⇒ 1 soln

<0 ⇒ no soln

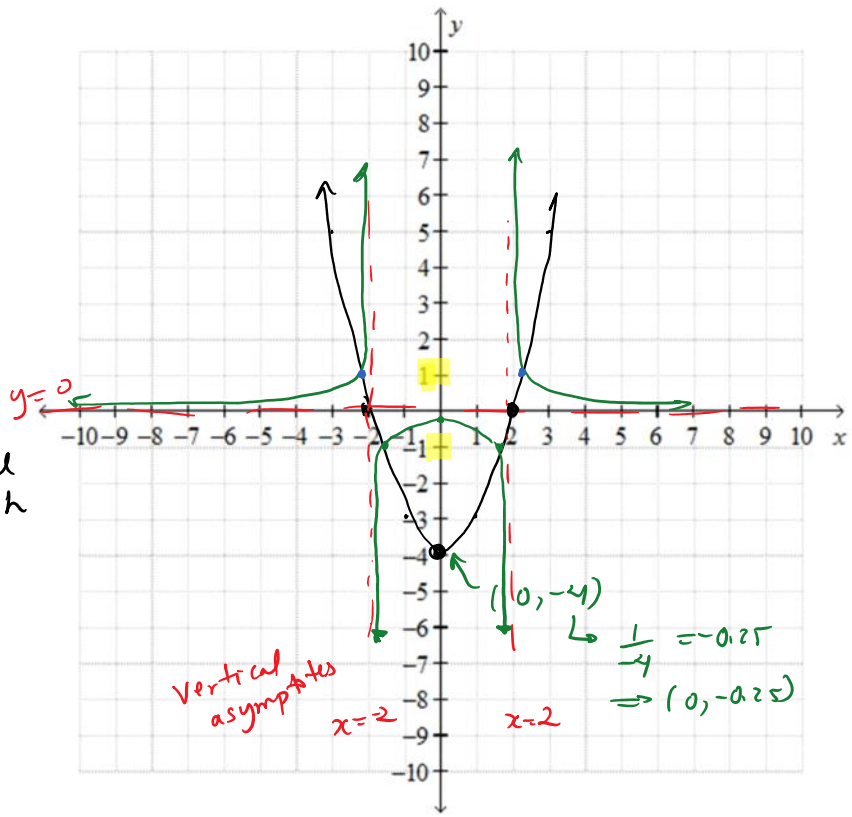
≤ -92

⇒ NO soln ✓

3. Sketch the graph of $\frac{1}{x^2-4}$.

$\frac{1}{(x+2)(x-2)}$

Look where $y=1$ & $y=-1$ on original graph



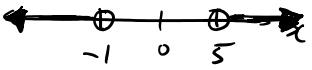
4. Solve the inequality in 1 variable $-x^2 + 4x < -5$.

$-1(-x^2 + 4x + 5) < 0(-1)$

$x^2 - 4x - 5 > 0$ (open circles)

$(x+1)(x-5)$

$x = -1$ or $x = 5$



Test 0: ... False

Test 10: ... TRUE

Test: $x=2$: $(-2)^2 - 4(-2) - 5 > 0$

$4 + 8 - 5 > 0$

$7 > 0$ TRUE

5. Convert $y = -5x^2 + 30x - 7$ to vertex form by completing the square.

$y = -5(x^2 - 6x) - 7$

$\frac{b}{2} = \frac{-6}{2} = -3 \rightarrow (-3)^2 = 9$

$= -5(x^2 - 6x + 9 - 9) - 7$

$= -5(x-3)^2 - 5(-9) - 7$

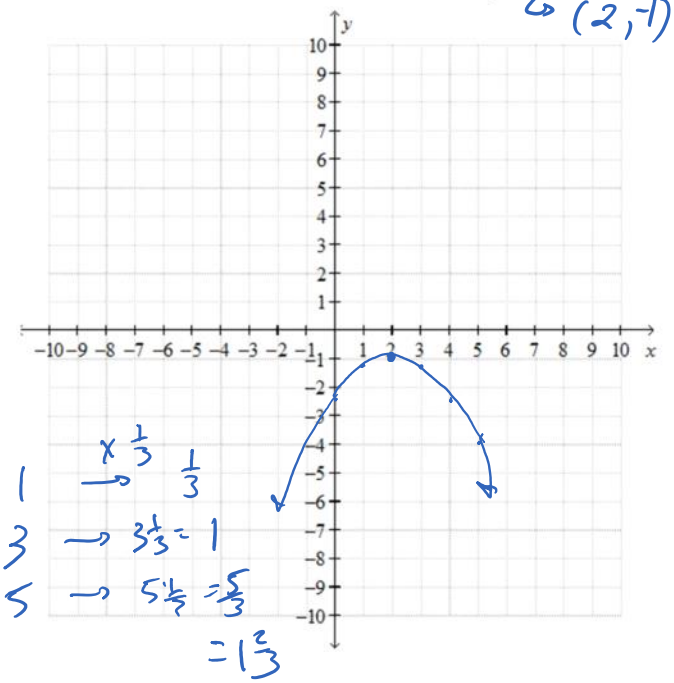
$+45$

$y = -5(x-3)^2 + 38$

Vertex $(3, 38)$

6. Accurately graph $y = -\frac{1}{3}(x-2)^2 - 1$

↳ $(2, -1)$



$1 \rightarrow \times\frac{1}{3} \rightarrow \frac{1}{3}$

$3 \rightarrow 3\frac{1}{3} = 1$

$5 \rightarrow 5\frac{1}{3} = \frac{5}{3} = 1\frac{2}{3}$

7. Graph the inequality $y > -3(x-2)^2 + 3$

$(2, 3)$