

Name Answer Key

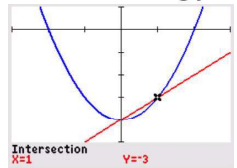
Date \_\_\_\_\_

Calculus I Honors - Graphing Calculator Review

Period \_\_\_\_\_

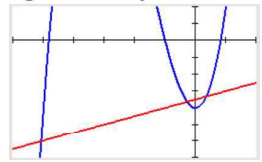
Directions: Find the points of intersection using your graphing calculator. Check #2 & 3 algebraically

Example)  $y = x^2 - 4$   
 $y = x - 4$



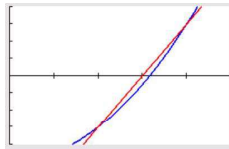
Pts. of Intersection: (0, -4), (1, -3)

1)  $x^3 + 5x^2 = y + 4$   
 $7 + 2y = x$



Pts. of Intersection: (-5.079, -6.040), (-2.277, -3.639)  
(.356, -3.322)

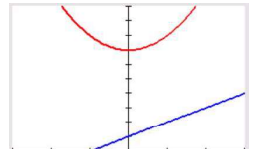
2)  $x^2 = 2y + 10$   
 $3x - y = 9 \Rightarrow y = 3x - 9$



$x^2 = 2(3x - 9) + 10$      $3(4) - y = 9$      $3(2) - y = 9$   
 $x^2 = 6x - 18 + 10$      $12 - y = 9$      $6 - y = 9$   
 $x^2 - 6x + 8 = 0$      $y = 3$      $y = -3$   
 $(x-4)(x-2) = 0$      $\boxed{(4, 3)}$      $\boxed{(2, -3)}$   
 $x = 4, 2$

Pts. of Intersection: \_\_\_\_\_

3)  $x - y + 1 = 0 \Rightarrow y = x + 1$   
 $y - x^2 = 7 \Rightarrow y = x^2 + 7$

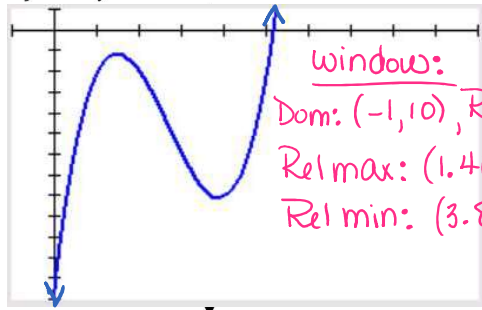


$x + 1 = x^2 + 7$   
 $0 = x^2 - x + 6$   
 $x = \frac{1 \pm \sqrt{1^2 - 4(6)}}{2(1)} = \frac{1 \pm \sqrt{-23}}{2} \Rightarrow$  Imag. Solns.  
No Soln!

Pts. of Intersection: None

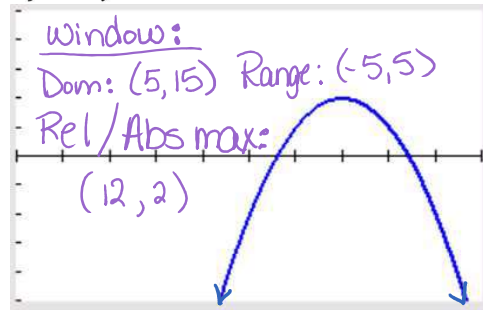
Directions: Use your graphing calculator to sketch each function. Identify all extrema and the viewing window you are using. NOTE: windows given are sample windows ONLY!

4)  $y = x^3 - 8x^2 + 17x - 12$



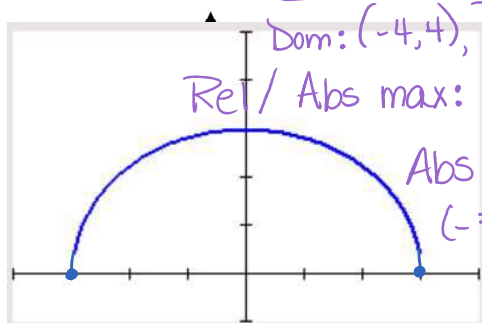
window:  
Dom: (-1, 10), Range: (-13, 1)  
Rel max: (1.465, -1.121)  
Rel min: (3.869, -8.065)

5)  $y = -x^2 + 24x - 142$



window:  
Dom: (5, 15), Range: (-5, 5)  
Rel/Abs max: (12, 2)

6)  $y = \sqrt{9 - x^2}$



window:  
Dom: (-4, 4), Range: (-1, 5)  
Rel/Abs max: (0, 3)  
Abs min: (-3, 0), (3, 0)

7)  $y = \sin(2x)$



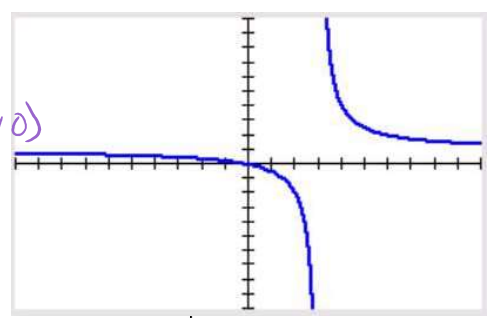
window:  
Dom: (-pi, pi), Range: (-2, 2)

Abs max:  $(\pi/4 + \pi n, 1)$   
Abs min:  $(3\pi/4 + \pi n, -1)$

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

Window:  
Dom: (-10, 10) Range: (-10, 10)

No extrema



**Directions:** Use your graphing calculator to complete the desired table of values for the given functions.  
*Hint: Use "Ask" feature on table.*

Example)  $y = \frac{x^2 - 4}{x - 2}$

x	y
0.5	2.5
1	3
1.5	3.5
2	error
2.5	4.5
3	5
3.5	5.5

9)  $y = \frac{\frac{1}{x} - \frac{1}{4}}{x - 4}$

x	y
3.25	-.0769
3.5	-.0714
3.75	-.0667
4	error
4.25	-.0588
4.5	-.0556
4.75	-.0526

10)  $y = \frac{\sqrt{x-4} - 2}{x - 20}$

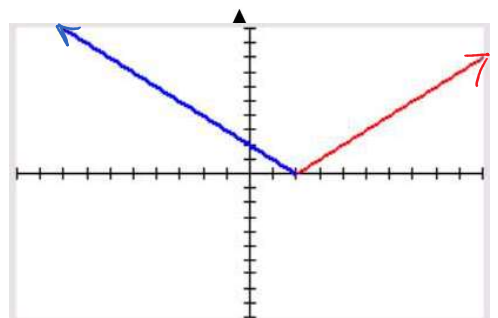
x	y
19.9	-19.87
19.99	-199.9
19.999	-2000
20	error
20.001	2000.1
20.01	200.12
20.1	20.125

11)  $y = \frac{\sin(2x)}{2x}$

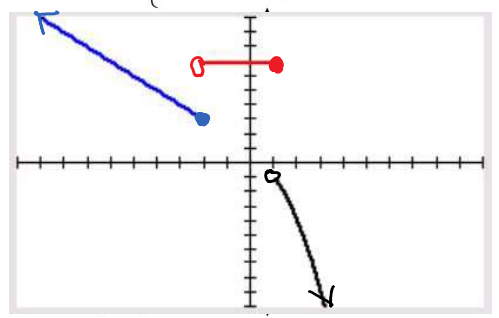
x	y
$-\pi/4$	.63662
$-\pi/6$	.82699
$-\pi/12$	.95493
0	error
$\pi/12$	.95493
$\pi/6$	.82699
$\pi/4$	.63662

**Directions:** Use your graphing calculator to graph each piecewise function and sketch below.

12)  $f(x) = \begin{cases} -x+2 & x \leq 2 \\ x-2 & x > 2 \end{cases}$



13)  $f(x) = \begin{cases} -x+1 & x \leq -2 \\ 7 & -2 < x \leq 1 \\ -x^2 & x > 1 \end{cases}$



\* Challenge: How can you write #12 without using piecewise notation?

what do you think?! Look at graph!