

Name: \_\_\_\_\_  
 Period: \_\_\_\_\_

**Warm-up: before Review for Final Exam**

**SHOW YOUR WORK** as demonstrated in class notes

What is the domain and range of the relation? Is the relation a function?

1.  $\{(2,6), (-3,9), (6,-4), (3,7), (-3,-4), (11,0), (0,10)\}$

D:  $\{2, -3, 6, 3, 11, 0\}$   
 R:  $\{6, 9, -4, 7, 0, 10\}$   
 Function? **No**

2. 

x	3	8	11	8	7
y	10	8	0	9	2

D:  $\{3, 8, 11, 7\}$   
 R:  $\{10, 8, 0, 9, 2\}$   
 Function? **No**

3.  $f(x) = |x+4| - 2$

D:  $\mathbb{R}$   
 R:  $y \geq -2$   
 Function? **yes**



4. Domain only for  $f(x) = \frac{1}{x(x+2)}$

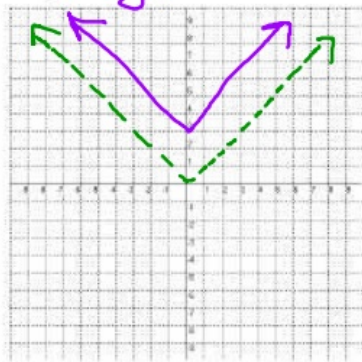
D:  $\mathbb{R}$  ex.  $x \neq -2, 0$

**List the transformations and sketch each graph. Determine the domain and range.**

**Draw the parent function with dotted lines on each graph.**

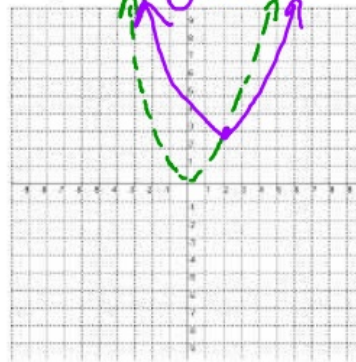
5.  $y = |x| + 3$

Parent:  $y = |x|$   
 Horizontal Shift: 0 L R  
 Vertical Shift: 3 U D  
 Domain:  $\mathbb{R}$   
 Range:  $y \geq 3$



6.  $y = (x-2)^2 + 3$

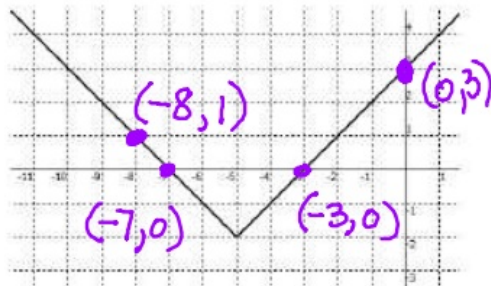
Parent:  $y = x^2$   
 Horizontal Shift: 2 L R  
 Vertical Shift: 3 U D  
 Domain:  $\mathbb{R}$   
 Range:  $y \geq 3$



Turn sheet over to complete

7. Given the graph of  $h(x)$

$h(x)$



a) Write the equation of the function

$$h(x) = |x+5|-2$$

b) Find  $h(0) = 3$

c) Find  $h(-8) = 1$

d) Find the y-intercept  $(0, 3)$

e) Find the x-intercepts  $(-7, 0)$   $(-3, 0)$

If  $f(x) = 2x + 1$ ,  $g(x) = 4 - x$ , and  $h(x) = 3x^2 - 5x + 2$ , find the following:

8.  $g(-3) =$

$$4 - (-3) = 7$$

9.  $f(x) - g(x) =$

$$\begin{aligned} &= 2x + 1 - (4 - x) \\ &= 2x + 1 - 4 + x \\ &= 3x - 3 \end{aligned}$$

10.  $h(x) + g(x) + f(x) =$

$$\begin{aligned} &3x^2 - 5x + 2 + 4 - x + 2x + 1 \\ &= 3x^2 - 4x + 7 \end{aligned}$$

11.  $f(g(x)) =$

$$\begin{aligned} &2(4 - x) + 1 \\ &= 8 - 2x + 1 \\ &= -2x + 9 \end{aligned}$$

12.  $g(f(x)) =$

$$\begin{aligned} &4 - (2x + 1) \\ &= 4 - 2x - 1 \\ &= -2x + 3 \end{aligned}$$

13.  $h(-2) =$

$$\begin{aligned} &3(-2)^2 - 5(-2) + 2 \\ &= 3 \cdot 4 + 10 + 2 \\ &= 12 + 10 + 2 \\ &= 24 \end{aligned}$$

Answers to question on Abs. Value Worksheet

$$(18) \quad | -3x+1 | = 1 \cdot 8$$

$$| -3x+1 | = 8$$

$$\begin{array}{ll} (+) \text{ case} & (-) \text{ case} \\ -3x+1=8 & -3x+1=-8 \\ -3x=7 & -3x=-9 \\ \underline{x=-7/3} & \underline{x=3} \end{array}$$

$$(14) \quad \begin{array}{r} -4+|5-6x|=-3 \\ +4 \qquad \qquad +4 \\ \hline |5-6x|=1 \end{array}$$

$$\begin{array}{ll} (+) \text{ case} & (-) \text{ case} \\ 5-6x=1 & 5-6x=-1 \\ -6x=-4 & -6x=-6 \\ x=\frac{4}{6} & x=1 \\ x=\frac{2}{3} & \end{array}$$

$$(10) \quad -8+|b+10|=-8$$

$$\begin{array}{r} +8 \qquad \qquad +8 \\ \hline |b+10|=0 \end{array}$$

$$\begin{array}{l} (+) \text{ case} \\ b+10=0 \end{array}$$

$$b=-10$$

$$(22) \quad \begin{array}{r} -4+|-n-8|=-52 \\ -4 \qquad \qquad -4 \\ \hline \end{array}$$

$$|-n-8|=13$$