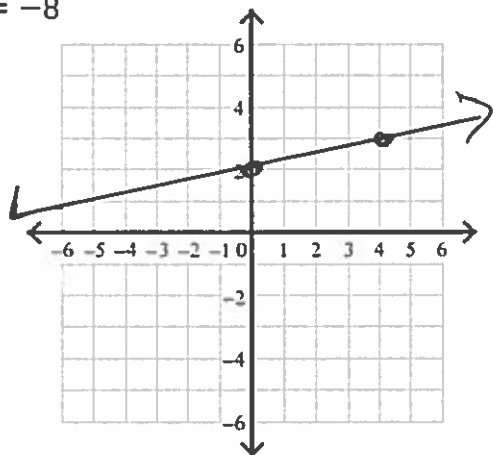


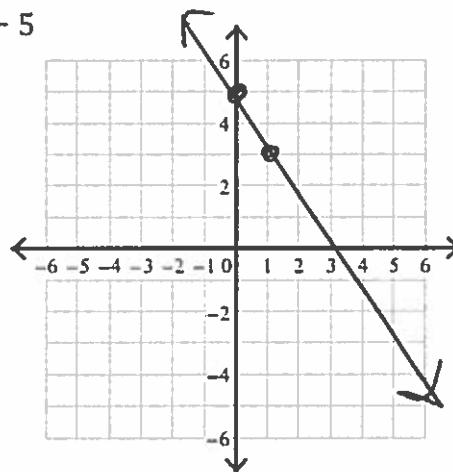
Units 1 and 2 Review

Sketch the graph of each line.

1)  $x - 4y = -8$



2)  $y = -2x + 5$



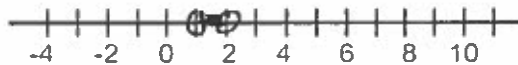
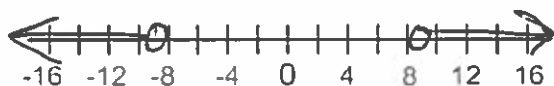
Solve each compound inequality and graph its solution.

3)  $11r + 11 > 110$  or  $11r + 7 < -92$

$r > 9$  or  $r < -9$

4)  $16 < 7 + 9n < 25$

$1 < n < 2$



Solve each equation.

5)  $|4x - 8| = 16$

$x = 6$ ,  $x = -2$

6)  $|2 - 2n| = -20$

No solution

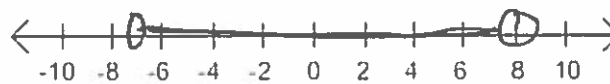
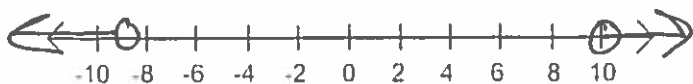
Solve each inequality and graph its solution.

7)  $4 + |10x - 5| > 99$

$x > 10$  or  $x < -9$

8)  $10 + |2 - 7p| < 64$

$-\frac{52}{7} < p < 8$



Simplify. Write "undefined" for expressions that are undefined.

$$9) 3 \begin{bmatrix} 1 \\ 3 \\ -6 \end{bmatrix} - \begin{bmatrix} 3 \\ 3 \\ -4 \end{bmatrix} = \begin{bmatrix} 0 \\ 6 \\ -14 \end{bmatrix}$$

$$10) 2 \begin{bmatrix} 1 & 4 & 3 & -6 \\ 0 & 6 & -2 & -3 \end{bmatrix} = \begin{bmatrix} 2 & 8 & 6 & -12 \\ 0 & 12 & -4 & -6 \end{bmatrix}$$

$$11) \begin{bmatrix} -1 & -2 & 2 & 0 \\ -1 & 3 & 4 & -4 \end{bmatrix} + \begin{bmatrix} -1 & 5 & -6 & -5 \\ 2 & 1 & -5 & -1 \end{bmatrix}$$

$$12) \begin{bmatrix} -1 & 2 \\ 1 & 4 \end{bmatrix} \cdot \begin{bmatrix} 5 & 3 & 0 \\ -5 & -2 & 2 \end{bmatrix} = \begin{bmatrix} -15 & -7 & 4 \\ -15 & -5 & 8 \end{bmatrix}$$

$$\begin{bmatrix} -2 & 3 & -4 & -5 \\ 1 & 4 & -1 & -5 \end{bmatrix}$$

Perform the indicated operation.

$$13) \begin{aligned} f(x) &= x - 1 \\ g(x) &= x + 1 \\ \text{Find } f(x) - g(x) \end{aligned}$$

$$-2$$

$$14) \begin{aligned} g(x) &= 4x - 3 \\ f(x) &= x^3 + 5x^2 \\ \text{Find } g(x) + f(x) \end{aligned}$$

$$x^3 + 5x^2 + 4x - 3$$

$$15) \begin{aligned} f(x) &= 2x^2 + 2 \\ g(x) &= 4x - 2 \\ \text{Find } f(x) \div g(x) \end{aligned}$$

$$\frac{2x^2 + 2}{4x - 2} = \frac{x^2 + 1}{2x - 1} \quad D: x \neq \frac{1}{2}$$

$$16) \begin{aligned} g(x) &= x^2 + 5x \\ h(x) &= x - 4 \\ \text{Find } g(h(7)) \end{aligned}$$

$$24$$

$$17) \begin{aligned} f(x) &= x + 3 \\ g(t) &= x^2 - 2 \\ \text{Find } g(f(x)) \end{aligned}$$

$$x^2 + 6x + 7$$

$$18) \begin{aligned} g(t) &= t^2 - 5t \\ f(t) &= 3t + 2 \\ \text{Find } g(f(t - 1)) \end{aligned}$$

$$9t^2 - 21t + 6$$

Solve each system by elimination

19)  $-8x - 6y = 6$   
 $x - 12y = 12$

$(0, -1)$

20)  $4x + 4y = -12$   
 $-5x + 6y = 4$

$(-2, -1)$

Solve each system by substitution

21)  $-4x + 6y = 20$   
 $-3x + y = 1$

$(1, 4)$

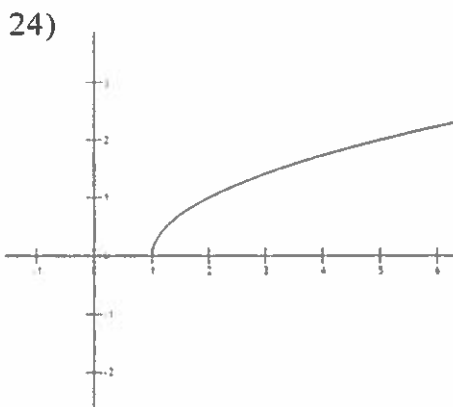
22)  $-x + 3y = 0$   
 $x - 3y = 0$

Infinitely many solutions

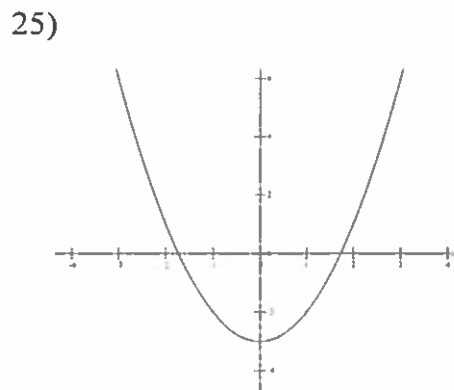
23) Julia and Jaidee are selling pies for a school fundraiser. Customers can buy cherry pies and pumpkin pies. Julia sold 8 cherry pies and 8 pumpkin pies for a total of \$168. Jaidee sold 2 cherry pies and 1 pumpkin pie for a total of \$25. What is the cost each of one cherry pie and one pumpkin pie?

Cherry \$4  
Pumpkin \$17

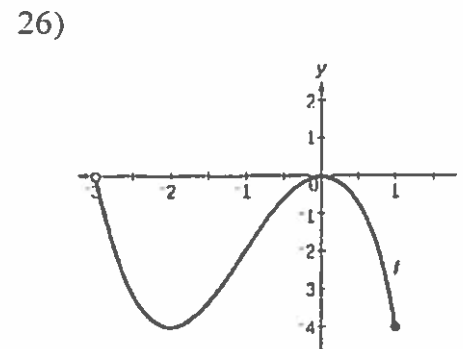
State the domain and range of the graph.



Domain:  $x \geq 1$   
Range:  $y \geq 0$



Domain:  $\mathbb{R}$   
Range:  $y \geq -3$



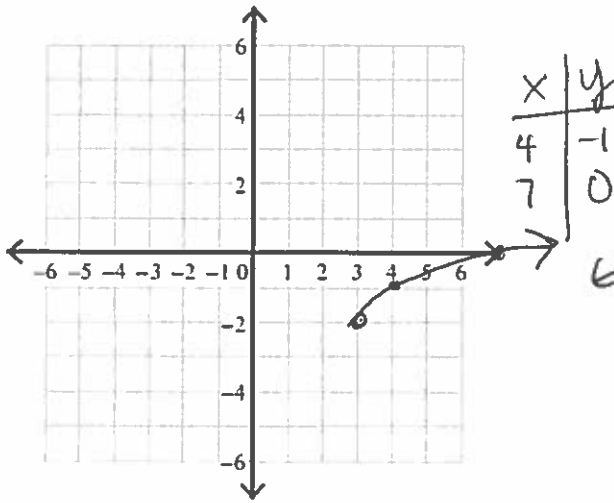
Domain:  $-3 < x \leq 1$   
Range:  $-4 \leq y \leq 0$

Describe the transformation that has occurred to the parent function. Then sketch the graph.

27)  $y = \sqrt{x-3} - 2$

Parent:  $y = \sqrt{x}$

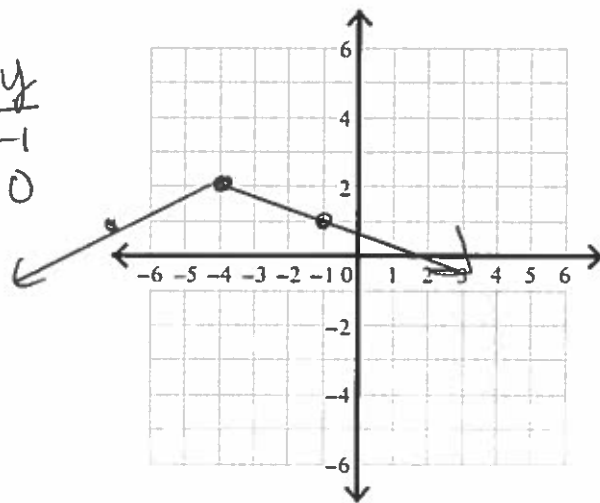
Transformation: 3 right  
+ 2 down (translation)



28)  $y = -\frac{1}{3}|x+4| + 2$

Parent:  $y = |x|$

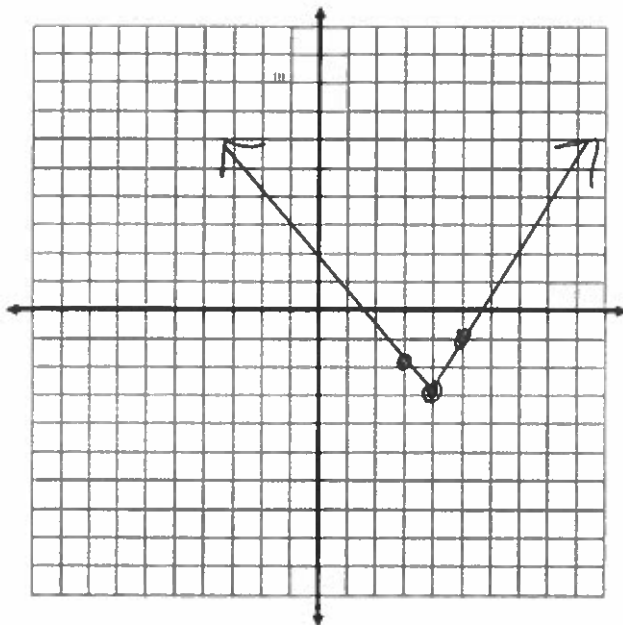
Transformation: reflect over x-axis,  
vertical shrink, translation  
4 left + 2 up



Graph the piecewise functions.

29)  $f(x) = \begin{cases} 1-x, & x \leq 4 \\ 2x-11, & x > 4 \end{cases}$

x	y
4	-3
3	-2
4	-3
5	-1



30)

$f(x) = \begin{cases} x+3, & x < -2 \\ x, & -2 \leq x < 1 \\ -x+2, & x \geq 1 \end{cases}$

x	y
-2	1
-3	0
-2	-2
1	1
1	1
2	0

