

**I. Solve each equation.**

1)  $\frac{x}{12} = -2$

 $\{-24\}$ **II. Solve each equation.**

2)  $1 + 6k + 7k = 1$

 $\{0\}$ **III. Solve each equation.**

3)  $2n + 2 = 11 - 7n$

 $\{1\}$ **IV. Solve each equation.**

4)  $2(1 - r) = 4r - 22$

 $\{4\}$ **V. Solve each equation.**

5)  $7 = 5x - 5x$

**No solution.****VI. Solve each equation.**

6)  $\left| \frac{k}{2} \right| + 3 = 4$

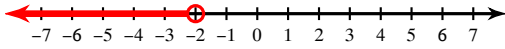
 $\{2, -2\}$ 

7)  $|k - 1| + 7 = 9$

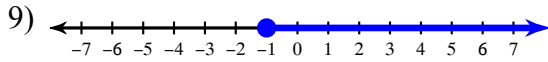
 $\{3, -1\}$

**VIII. Draw a graph for each inequality.**

8)  $x < -2$



**IX. Write an inequality for each graph.**



$a \geq -1$

**X. Write an equation or inequality for each.**

10) Five more than a number squared is 14.

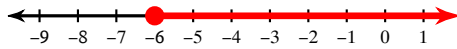
$x^2 + 5 = 14$

11) 8 is less than the quotient of x and 11.

$8 < \frac{z}{11}$

**XI. Solve each inequality and graph its solution.**

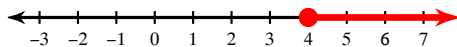
12)  $-84 \leq 14n$



$n \geq -6$

**XII. Solve each inequality and graph its solution.**

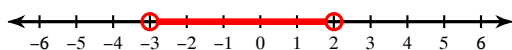
13)  $v - 3v \leq -8$



$v \geq 4$

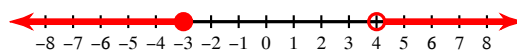
**Solve each compound inequality and graph its solution.**

14)  $-8 < 3n + 1 < 7$



$-3 < n < 2$

15)  $2x + 8 \leq 2$  or  $6x + 4 > 28$



$x \leq -3$  or  $x > 4$

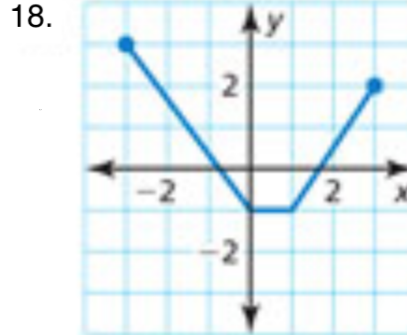
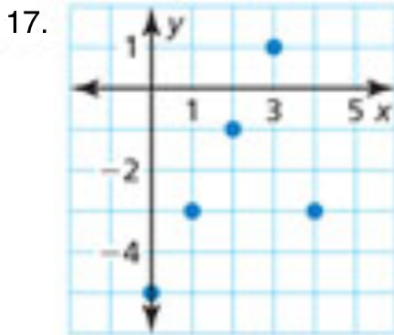
Determine whether the relation is a function. Explain. (Section 3.1)

16.

Input, $x$	-1	0	1	2	3
Output, $y$	0	1	4	4	8

Yes, the relation is a function.  
Each input is paired with exactly one output.

Find the domain and range of the function represented by the graph. (Section 3.1)



17. Domain: 0, 1, 2, 3, 4  
Range: -5, -3, -1

18. Domain:  $-3 \leq x \leq 3$   
Range:  $-1 \leq y \leq 3$

Determine whether the graph, table, or equation represents a *linear* or *nonlinear* function. Explain. (Section 3.2)

19.

$x$	$y$
-5	3
0	7
5	10

As  $x$  increases by the same amount,  $y$  changes by different amounts so the function is nonlinear.

Determine whether the domain is *discrete* or *continuous*. Explain. (Section 3.2)

20.

Depth (feet), $x$	33	66	99
Pressure (ATM), $y$	2	3	4

Even though only 3 data points are listed, depth can be measured at any part of a foot, so the domain is continuous.