

Name

Key

Date Due

6th GRADE

STUDY GUIDE

Ch 8 Inequalities

Complete the work inside the boxes under the problem. Circle your answer.  
Check your answers on [spxmath.weebly.com](http://spxmath.weebly.com) when finished. Test FRIDAY.

1. Determine which number is a solution of the inequality.

$$n - 2 < 3; \quad 4, 5, 6$$

$$4 - 2 < 3? \quad 2 < 3 \text{ Yes}$$

$$5 - 2 < 3? \quad 3 < 3 \text{ No}$$

$$6 - 2 < 3? \quad 4 < 3 \text{ No}$$

2. Determine which number is a solution of the inequality.

$$10 - f < 7; \quad 2, 3, 4$$

$$10 - 2 < 7? \quad 8 < 7 \text{ No}$$

$$10 - 3 < 7? \quad 7 < 7 \text{ No}$$

$$10 - 4 < 7? \quad 6 < 7 \text{ Yes}$$

3. Determine which number is a solution of the inequality.

$$16 + j \geq 29; \quad 11, 12, 13$$

$$16 + 11 \geq 29? \quad 27 \geq 29 \text{ No}$$

$$16 + 12 \geq 29? \quad 28 \geq 29 \text{ No}$$

$$16 + 13 \geq 29? \quad 29 \geq 29 \text{ Yes}$$

4. Is the given value a solution of the inequality?

$$9x \geq 80; \quad x = 9$$

$$9 \cdot 9 \geq 80?$$

$$81 \geq 80 \quad \text{Yes - True}$$

5. Is the given value a solution of the inequality?

$$15 \leq 3z; \quad z = 4$$

$$15 \leq 3 \cdot 4?$$

$$15 \leq 12 \quad \text{No - Not true}$$

6. Is the given value a solution of the inequality?

$$2n > 26; \quad n = 5$$

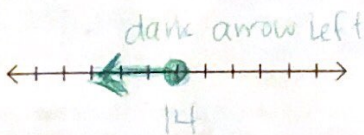
$$2 \cdot 5 > 26$$

$$10 > 26 \quad \text{No - Not true}$$

7. Graph the inequality on a number line.

$$x \leq 14$$

closed circle - to the left



8. Graph the inequality on a number line.

$$f \geq 4$$

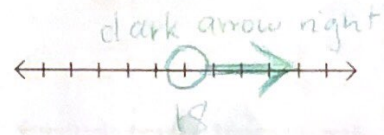
closed circle - to the right



9. Graph the inequality on a number line.

$$y > 18$$

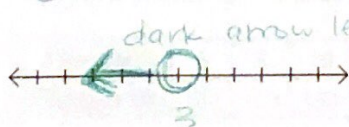
open circle - to the right



10. Graph the inequality on a number line.

$$m < 3$$

open circle - to the left



11. Write an inequality for this sentence:

The light bulb must be at least 60 watts.

at least means equal to or more than

$$B \geq 60$$

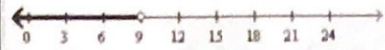
12. Write an inequality for each sentence.

The scale can hold no more than 375 pounds.

no more than means it can be equal to or less than

$$P \leq 375$$

13. Write an inequality for the graph.



open circle to left means  $<$

$$x < 9$$

14. Write an inequality for the graph.

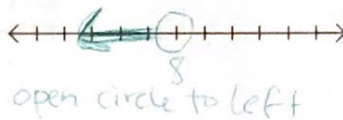


closed circle to right means  $\geq$

$$x \geq 6$$

15. Solve the inequality. Graph the solution on a number line.

$$\begin{array}{r} m - 7 < 1 \\ + 7 \quad + 7 \\ \hline m < 8 \end{array}$$



open circle to left

16. Solve the inequality. Graph the solution on a number line.

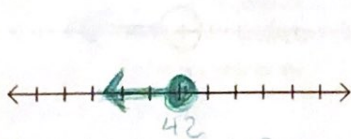
$$\begin{array}{r} 2g < 24 \\ \div 2 \quad \div 2 \\ \hline g < 12 \end{array}$$



open circle to left

17. Solve the inequality. Graph the solution on a number line.

$$\begin{array}{r} \frac{v}{1} \times \frac{v}{6} \leq 7 \times 6 \\ \hline v \leq 42 \end{array}$$



closed circle left

18. Solve the inequality. Graph the solution on a number line.

$$\begin{array}{r} p + 4 \geq 12 \\ - 4 \quad - 4 \\ \hline p \geq 8 \end{array}$$



closed circle right



Complete the work inside the boxes under the problem. Circle your answer.  
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1. Complete the function table by following the rule.

input (n)	output (7 - n)
2	$7 - 2 = 5$
4	$7 - 4 = 3$
5	$7 - 5 = 2$

2. Find the rule for the table.

n		
6	$\Rightarrow$	3
12	$\Rightarrow$	6
18	$\Rightarrow$	9

Words : Divide by 2  
 Rule:  $n \div 2$   
 in symbols

3. Find the rule for the table.

n		
2	$\Rightarrow$	4
4	$\Rightarrow$	6
8	$\Rightarrow$	10

Words : Add 2  
 Rule:  $n + 2$   
 in symbols

4. Find the value of the seventh term in the sequence.

Position	1	2	3	4	n
Value of Term	4	5	6	7	

Words: Add 3  
 Rule:  $n + 3$   
 7th term:  $7 + 3 = 10$

5. Complete the sequence.

4, 7, 10, 13, 16, 19

Rule: Add 3

6. Complete the sequence.

2.5, 5, 7.5, 10, 12.5

Rule: Add 2.5

7.

Use the ordered pairs to complete the table.

Stacy wants to make a function table for the input-output values in the graph. What output values can she enter to complete the table?

Input, x	0	1	2	3
Output, y	0	15	30	45

8. What equation represents the function below?

Input, x	0	1	2	3	4
Output, y	8	13	18	23	28

What happens to x to get to y?  
 What does y do? Go up by 5.  
 So we have  $y = 5x$ . But if  $x = 0, y = 8$ , so we need to add 8. So we have  $y = 5x + 8$ .

9. Write an equation for the graph.

First make a table:

x	y
1	10
2	20
3	30

what happens to x to get to y?  $\times 10$ .  
 So  $y = 10x$

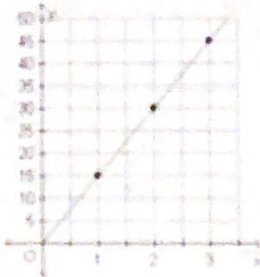
10. The table shows how far Marissa rides her bike after different amounts of time. At this rate, how far will she ride in 20 seconds?

Time (sec)	6	8	10	12	14	16	18	20
Distance (ft)	90	120	150	180	210	240	270	300

300 ft



11. Write an equation for the graph.



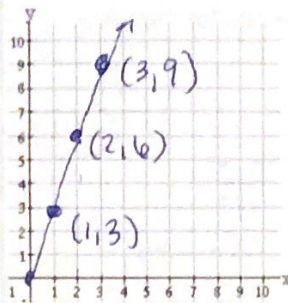
So equation is:  $y = 15x$

First make an x-y table:

x	y
1	15
2	30
3	45

Rule:  $\times 15$

12. Graph  $y = 3x$ .

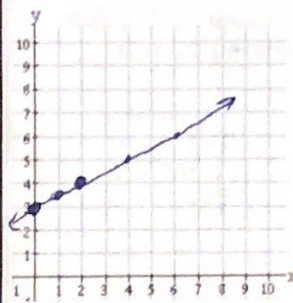


Then graph the ordered pairs.

First, choose some x's and find their y's:

x	y
1	3
2	6
3	9

13. Graph  $y = 0.5x + 3$



x	y
0	$0.5(0) + 3 = 3$
1	$0.5(1) + 3 = 3.5$
2	$0.5(2) + 3 = 4$

14.

Chris is building a brick wall for his garden. It takes him 18 bricks to complete a single row. Complete the function table to show the relationship between the number of bricks  $b$  that it takes to make  $r$  rows.

Rows, $r$	Bricks, $b$
1	18
2	36
3	54
4	72
5	90
6	108

18 bricks per row, so rule is multiply by 18.

15. The school library is buying new books that cost \$9 each.

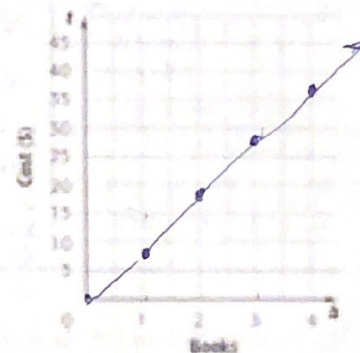
Make a function table to show the relationship between the number of books  $b$  and the total cost  $t$ .

Books ( $b$ )	Total Cost ( $t$ )
1	9
2	18
3	27
4	36

Ordered pairs

(1, 9)  
(2, 18)  
(3, 27)  
(4, 36)

Graph the ordered pairs. Describe the graph.



Write an equation to find  $t$ , the total cost in dollars for any number of books  $b$ .

The rule is multiply by 9. So our equation is  $y = 9x$