

Extra Practice

 **Use Math Tools** Complete each function table.

14. Homework Use

Input (x)	$x + 3$	Output
0	$0 + 3$	3
2	$2 + 3$	5
4	$4 + 3$	7

15.

Input (x)	$4x + 2$	Output
1	$4(1) + 2$	6
3	$4(3) + 2$	14
6	$4(6) + 2$	26

16.

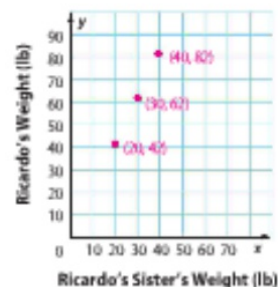
Input (x)	$x - 1$	Output
1	$1 - 1$	0
3	$3 - 1$	2
5	$5 - 1$	4

17.

Input (x)	$2x - 6$	Output
3	$2(3) - 6$	0
6	$2(6) - 6$	6
9	$2(9) - 6$	12

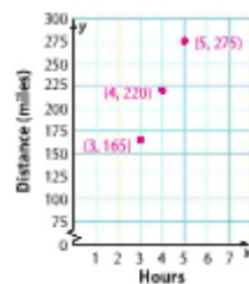
18. Ricardo weighs 2 pounds more than twice his sister's weight. The function rule, $2x + 2$ where x is his sister's weight, can be used to find Ricardo's weight. Make a table of values that show Ricardo's weight when his sister is 20, 30, and 40 pounds. Then graph the function.

Ricardo's Sister's Weight (x)	$2x + 2$	Ricardo's Weight (y)
20	$2(20) + 2$	42
30	$2(30) + 2$	62
40	$2(40) + 2$	82




19. The Quinn family drove at a rate of 55 miles per hour. The function rule that represents this situation is $55x$, where x is the number of hours. Make a table to find how many hours they have traveled when they have driven 165, 220, and 275 miles. Then graph the function.

Hours (x)	$55x$	Miles (y)
3	$55(3)$	165
4	$55(4)$	220
5	$55(5)$	275



Extra Practice

Use words and symbols to describe the value of each term as a function of its position. Then find the value of the twelfth term in the sequence.

17. 

Position	6	7	8	9	n
Value of Term	2	3	4	5	■

subtract 4 from the position number; $n - 4$; 8

Look at position 6 and the value of the term. 2 is 4 less than 6, so try subtracting 4 from the other position numbers listed. The function rule is $n - 4$. $12 - 4 = 8$

18.

Position	1	2	3	4	n
Value of Term	5	10	15	20	■

multiply the position number by 5; $5n$; 60

19. Describe the relationship between the terms in the sequence 4, 12, 36, 108, ... Then write the next three terms in the sequence.


Each term is found by multiplying the previous term by 3;

324, 972, 2,916

20. The table shows the cost of a pizza based on the number of toppings. Write a function rule to find the cost for a pizza with x toppings.

$2x + 10$

Number of Toppings (x)	Cost (\$)
1	12
2	14
3	16
4	18

 **Identify Structure** Determine how the next term in each sequence can be found. Then find the next two terms in the sequence.

21. 1, 4, 7, 10, ...

add 3; 13, 16

22. 2.3, 3.2, 4.1, 5.0, ...

add 0.9; 5.9, 6.8

23. $1\frac{1}{2}$, 3 , $4\frac{1}{2}$, 6, ...

add $1\frac{1}{2}$; $7\frac{1}{2}$, 9

Find the missing number in each sequence.

24. 7, $11\frac{1}{2}$, 16, $20\frac{1}{2}$, ...

25. 14.6, 19.3, 24, 28.7, ...

Extra Practice

Identify Repeated Reasoning Write an equation to represent each function.

12.

Input (x)	0	1	2	3	4
Output (y)	0	11	22	33	44

$$y = 11x$$

Each output y is 11 times each input x .

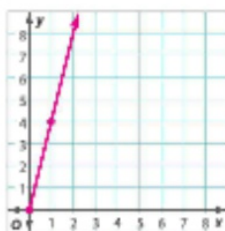
13.

Input (x)	1	2	3	4	5
Output (y)	10	20	30	40	50

$$y = 10x$$

Graph each equation.

14. $y = 4x$



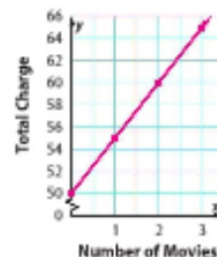
15. $y = 0.5x$



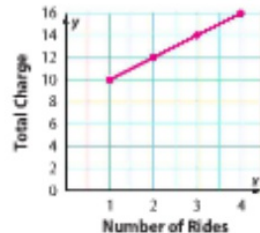
16. $y = x + 0.5$



17. A company charges \$50 per month for satellite television service plus an additional \$5 for each movie ordered. The equation $y = 50 + 5x$ describes the total amount y a customer will pay if they order x movies. Graph the function.

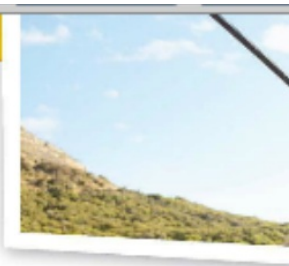


18. A fair charges an admission fee of \$8. Each ride is an additional \$2. The equation $y = 8 + 2x$ describes the total charge y for the number of rides x . Graph the function.

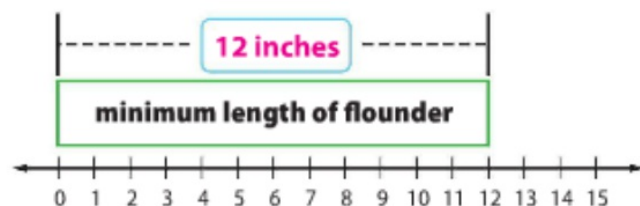


Hands-On Activity

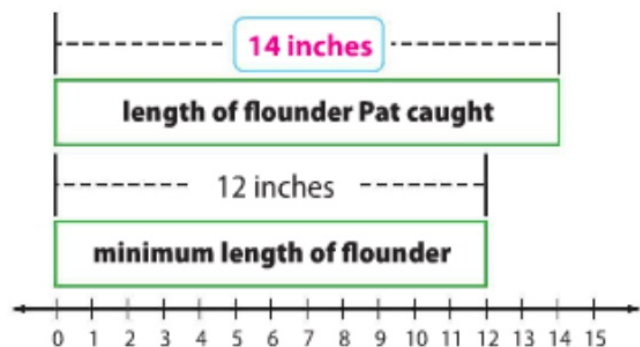
An *inequality* is a mathematical sentence that compares quantities. An inequality like $x < 7$ or $x > 5$ can be written to express how a variable compares to a number.



- Step 1** Label the minimum length of flounders that may be kept.



- Step 2** Label the length of the flounder Pat caught on the top bar diagram.



The bar representing Pat's fish is **longer** than the bar representing the minimum length that can be kept.

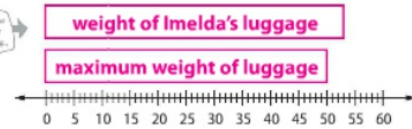
So, Pat **can** keep the fish.



Investigate

CCSS Model with Mathematics Work with a partner. Draw bar diagrams to solve each problem.

- For flights within the United States, luggage must be no more than 50 pounds. Imelda's luggage weighs 53 pounds. Can she take the luggage on her flight? no



- Byron needs at least 20 minutes between the end of his soccer practice and the start of his dentist appointment. His practice ends at 4:30 and his appointment is at 5:00.

Does he have enough time? yes



- CCSS Reason Inductively** Which inequality is used when the situation involves a "minimum"? Explain. greater than; Sample answer: By using the term "minimum"; the situation is asking for the least value possible, so all other values that make the inequality true would be greater than or equal to the minimum.
- CCSS Reason Inductively** Which inequality is used when the situation involves a "maximum"? Explain. less than; Sample answer: By using the term "maximum"; the situation is asking for the greatest number possible, so all other values would be less than or equal to the maximum.



Create

- CCSS Reason Inductively** Write a rule for determining possible values of a variable in an inequality. Sample answer: Using a number line, determine where the possible values lie in relation to the stated value. If the possible value is to the left, it is less than. If it is to the right, it is greater than.
- Inquiry** HOW can bar diagrams help you to compare quantities? Sample answer: The length of two bar diagrams can help you determine if two quantities are equal or if one amount is greater than or less than the other.