

**Due: Tuesday, December 20<sup>th</sup> 2016**

Each section has a released question from the NYS Math 8 test. The questions surrounding it help you think about the various skills needed to solve the problem. Answer all questions. Show ALL Work.

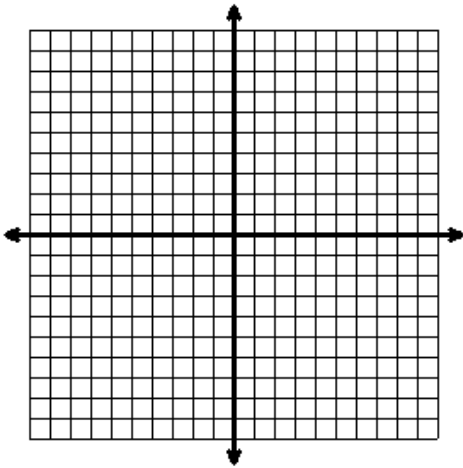
**Multiply the input by 4, then subtract 5**

Input	Output
0	
2	
3	
	15
	35

**Write the Function Rule**

\_\_\_\_\_

**Graph**



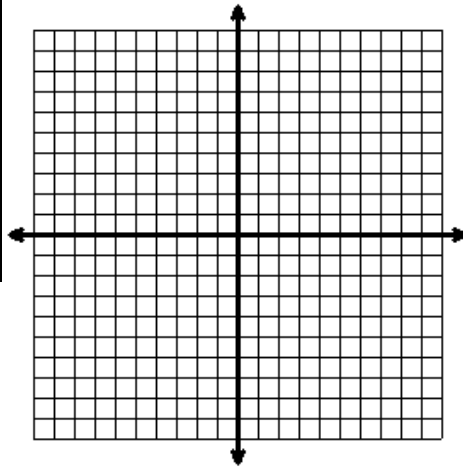
**Divide the input by 2, then add 3**

$x$	$y$
-6	
-4	
	3
2	
	9

**Write the Function Rule**

\_\_\_\_\_

**Graph**



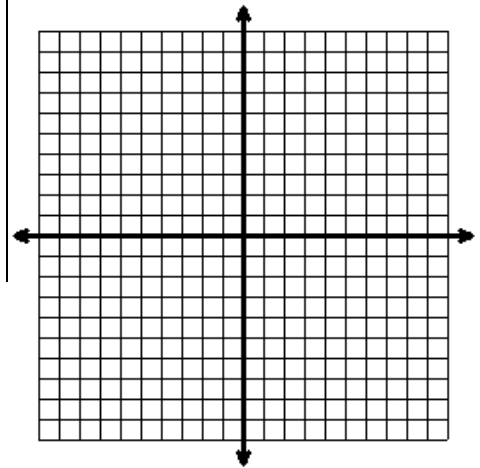
**Multiply the input by  $-\frac{2}{3}$ , then subtract 5**

$x$	$f(x)$
-6	
-3	
0	
3	
6	

**Write the Function Rule**

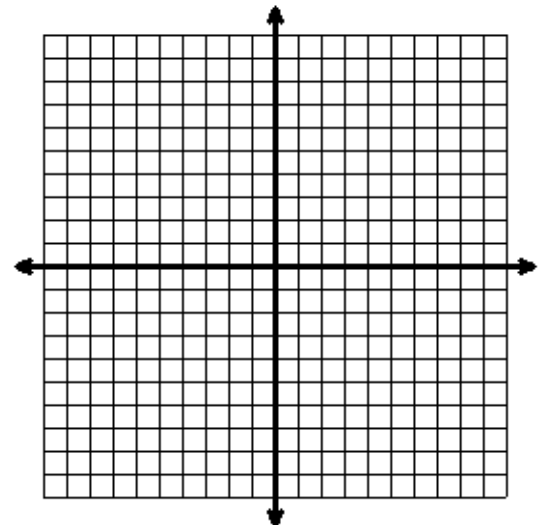
\_\_\_\_\_

**Graph**



*NYS Test Question*

A certain function is defined as “multiply the input by  $-\frac{3}{4}$ , then add 2.”  
Graph the function on the coordinate plane below



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Two friends are planning to start their own lawn mowing business. The friends start out by buying a lawn mower and weed trimmer for their business. If their business plan goes as planned, they will make money according to the pattern found in the table to the left.

<i>Lawns Mowed</i>	<i>Profit</i>
2	\$-110
6	\$-30
10	\$50
14	\$130
18	\$210

- What is the initial value (0 lawns mowed)?
- What does this mean in the context of the problem?
- What is the rate of change?
- What does this mean in the context of the problem?
- What is the *x-intercept* (0 Profit)?
- What does this mean in the context of the problem?
- Write the equation in terms of  $m$  for lawns mowed and  $P$  for profit.
- Use your equation to find how many lawns it will take the friends to earn \$500 Profit.

### *NYS Test Question*

Tim is selling tickets to a school sporting event to raise money for his club. He puts some extra money in the box before he began. As he sells tickets he records the data below.

**TOTAL AMOUNT OF MONEY  
FROM TICKET SALES**

Number of Tickets Sold	Total Money in Box (dollars)
7	108.75
13	146.25
18	177.50

Assuming the tickets are the same price, write an equation that represents the situation in the table. Explain what your rate of change and initial value represent in the problem.

Equation: \_\_\_\_\_

Rate of Change:

Initial Value:

Tim is selling tickets to a school sporting event to raise money for his club. He put some extra money in his box before he began. As he sells tickets, he records the number of tickets he has sold and the total amount of money in the box. Some of his data are shown below.

**TOTAL AMOUNT OF MONEY  
FROM TICKET SALES**

Number of Tickets Sold	Total Money in Box (dollars)
7	108.75
13	146.25
18	177.50

Assuming all the tickets are the same price, write an equation that represents the situation in the table. Explain how to use your equation to determine the amount of money originally in the box before any tickets were sold and the price of each ticket.