Warm Up October 22, 2018

1.) A 12 oz box of Thanksgiving stuffing is $2.15, while a 16 oz box costs $2.88. Which is the better buy?

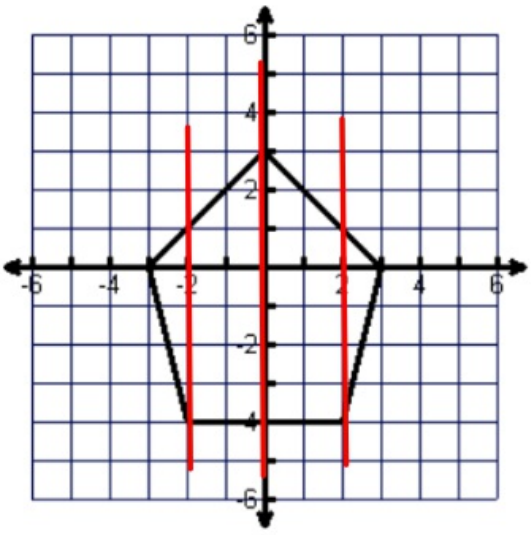
$\frac{\$2.15}{12\text{ oz}}$ vs. $\frac{\$2.88}{16\text{ oz}}$ $\$.18/\text{oz}$ ($.179) $\$.18\text{ oz}$

The unit rates are equivalent - there is no better buy.

2.) State the domain, range, and whether the graph is a function. NO

D: $-3 \le x \le 3$

R: $-4 \le y \le 3$



3.) Given the domain {-2, 0, 4}, find the range for the function $f(x) = x^2 - x + 1$.

$f(-2) = (-2)^2 - (-2) + 1$

$f(-2) = 7$

$f(0) = (0)^2 - (0) + 1$

$f(0) = 1$

$f(4) = (4)^2 - (4) + 1$

$f(4) = 13$

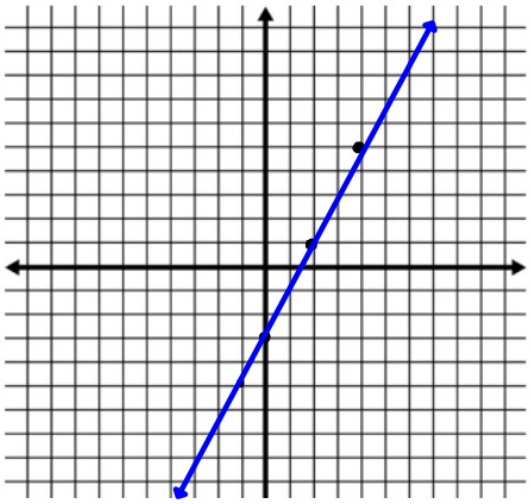
$\{1, 7, 13\}$

Graphing Functions

Functions can be represented by an equation. To graph them, you can create a table to plot the points.

y = 2x - 3

x	$f(x)$
−1	−5
0	−3
2	1
4	5

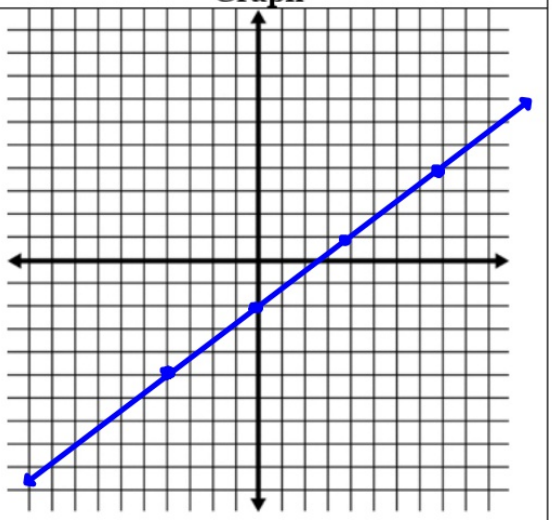


To fill in the table use function notation.

y = 2x - 3 --> f(x) = 2x - 3

f(-1) = $2(-1)-3=-5$ f(2) = $2(2)-3=1$

f(0) = $2(0)-3=-3$ f(4) = $2(4)-3=5$

Function	Table	Graph
Function A $y = \frac{3}{4}x - 2$ $f(-4) =$ −5 $f(0) =$ −2 $f(4) =$ 1 $f(8) =$ 4	x | $f(x)$ −4 | −5 0 | −2 4 | 1 8 | 4	

$f(-4) = \frac{3}{4}(-4) - 2 = -5$

$f(0) = \frac{3}{4}(0) - 2 = -2$

$f(4) = \frac{3}{4}(4) - 2 = 1$

$f(8) = \frac{3}{4}(8) - 2 = 4$

Function B

$y = 2^x$

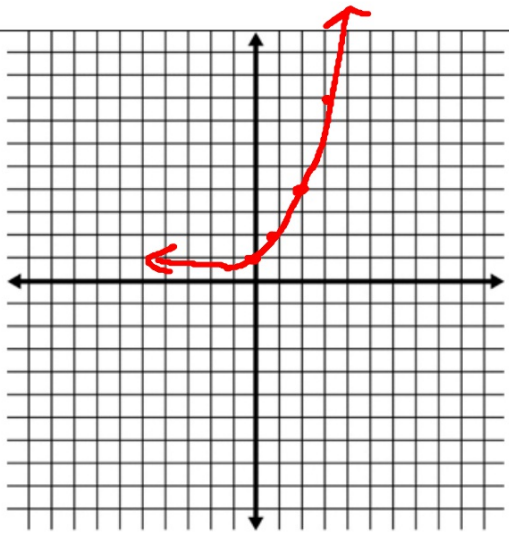
$f(0) =$ 1

$f(1) =$ 2

$f(2) =$ 4

$f(3) =$ 8

x	$f(x)$
0	1
1	2
2	4
3	8



$f(0) = 2^0 = 1$

$f(1) = 2^1 = 2$

$f(2) = 2^2 = 4$

$f(3) = 2^3 = 8$

Function C

$y = x^2 - 5x + 6$

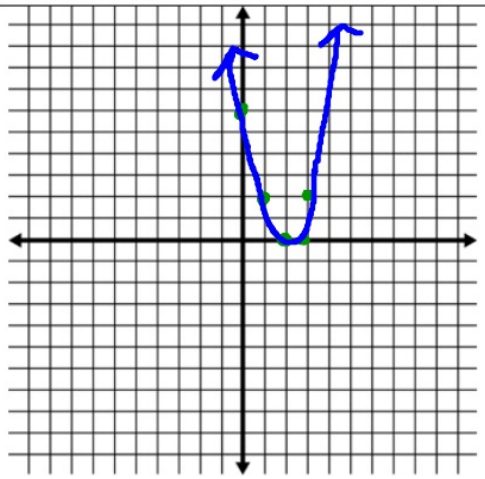
$f(-1) =$ _____

$f(0) =$ _____

$f(1) =$ _____

$f(2) =$ _____

x	$f(x)$
-1	12
0	6
1	2
2	0



$f(-1) = (-1)^2 - 5(-1) + 6 = 12$

$f(0) = (0)^2 - 5(0) + 6 = 6$

$f(1) = (1)^2 - 5(1) + 6 = 2$

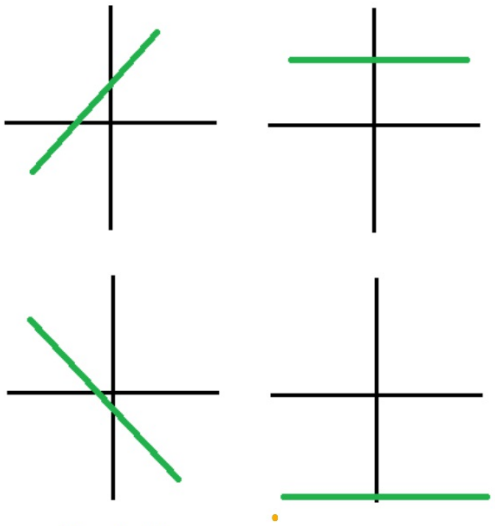
$f(2) = (2)^2 - 5(2) + 6 = 0$

$f(3) = (3)^2 - 5(3) + 6 = 0$

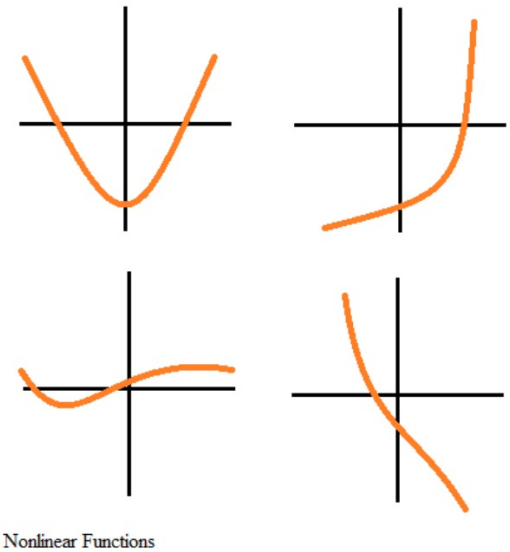
$f(4) = (4)^2 - 5(4) + 6 = 2$

Linear v. Non-Linear

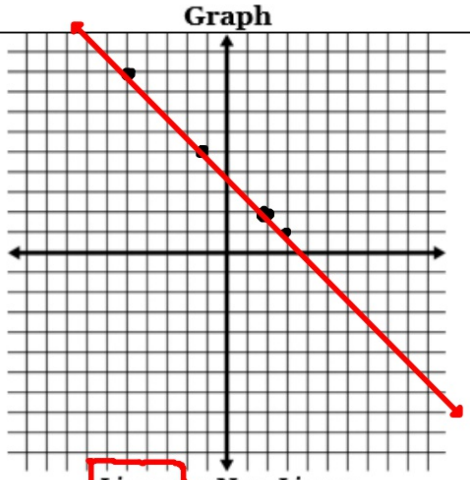
When points lie on a straight line, it is called a linear function. Functions that do not lie on straight line are called nonlinear.

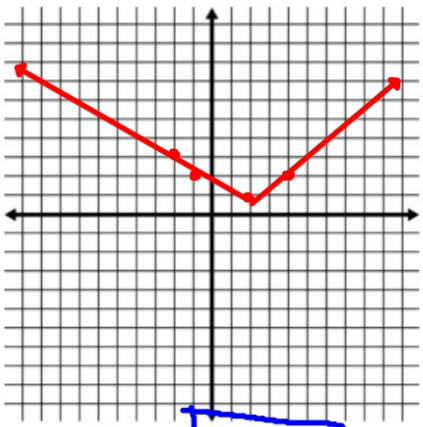


Linear Functions



Nonlinear Functions

Function	Table	Graph
Function A $y = 4 - x$ $f(-5) =$ _____ $f(-1) =$ _____ $f(2) =$ _____ $f(3) =$ _____	x | $f(x)$ -5 | 9 -1 | 5 2 | 2 3 | 1	 Linear or Non-Linear

Function B $y = \lvert x - 1 \rvert$ $f(-2) =$ _____ $f(-1) =$ _____ $f(2) =$ _____ $f(3) =$ _____	x | $f(x)$ -2 | 3 -1 | 2 2 | 1 3 | 2	 Linear or Non-Linear