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Nov 28-10:46 AM

72-73 Strand 3 WWK

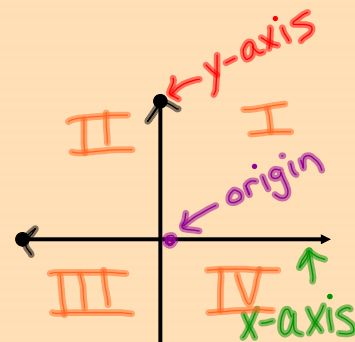
y-axis : vertical number line

x-axis : horizontal number line

origin : point of intersection between
x & y-axis. $(0,0)$

quadrants : axes divide the plane in to
quarters

graph of the equation : the set of all points
whose coordinates satisfy
the equation



A small coordinate plane with a line passing through it. The line is labeled with the equation $y = mx + b$.

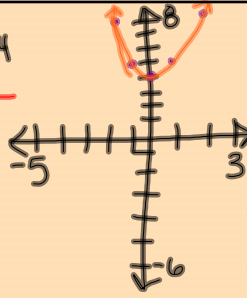
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Point Plotting Method

1. Find several ordered pairs that satisfy the equation. (x,y)
2. Plot the ordered pairs
3. Connect the ordered pair with a smooth line or curve

$$y = x^2 + 4$$

x	y
-2	8
-1	5
0	4
1	5
2	8



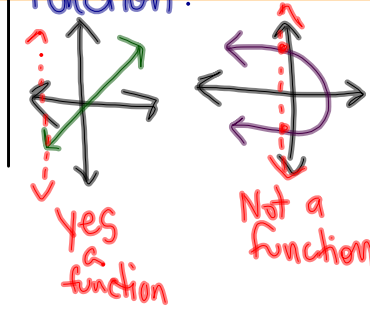
Functions

Function Notation

The notation $y=f(x)$ indicates that the variable y is a function of x . $f(x)$ is read as "f of x"

Vertical Line Test

If any vertical line intersects a graph in more than one point, the graph is NOT a function.

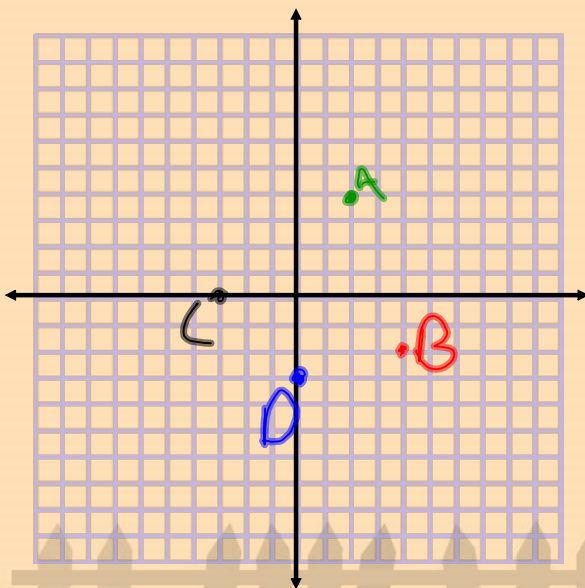


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Example 1 (page 75):

Plot the points:

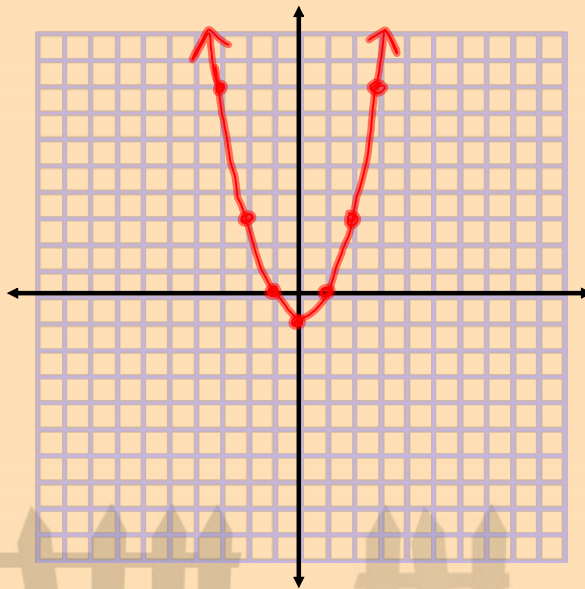
- $A(2, 4), B(4, -2),$
 $C(-3, 0),$ and $D(0, -3).$



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Example 2 (page 75): Graph $y = x^2 - 1$. Select integers for x , $-3 \leq x \leq 3$.

x	y
-3	8
-2	3
-1	0
0	-1
1	0
2	3
3	8



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Example 3 (page 75):

The formula $y = -0.05x^2 + 4.2x - 26$ models the percentage of coffee drinkers, y , who are x years old who become irritable if they do not have coffee at their regular time.

a) Express the equation in function notation.

$$f(x) = -0.05x^2 + 4.2x - 26$$

b) Find and interpret $f(20)$

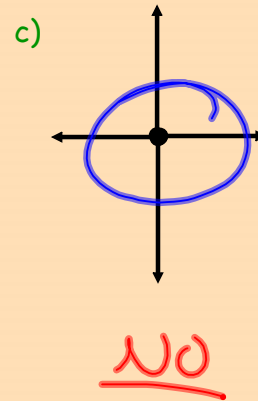
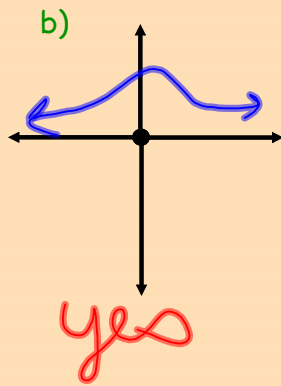
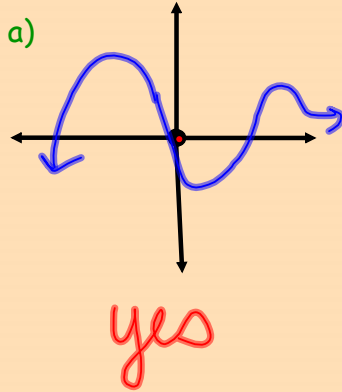
$$\begin{aligned} f(20) &= -0.05(20)^2 + 4.2(20) - 26 \\ &= -0.05(400) + 84 - 26 \\ &= -20 + 58 \end{aligned}$$

$$f(20) = 38$$

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Example 4 (page 75): Use the vertical line test to identify graphs

in which y is a function of x .



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Txt 343-344 (369370)
#'s 1, 4, 7, 10, 16, 22, 25, 28,
31, 34, 37, 40, 43, 46, 49,
52, 55
plotted on
one graph



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Oct 30-8:00 AM