

BE-1A TUESDAY 1-16-07

GIVEN THE EQUATION $y = 2x + 3$
if you pick ANY VALUE for x you
can find the " y " that "goes with it"
by substituting the VALUE of x you
picked into $y = 2(\overset{x}{}) + 3$
 $\uparrow$
SUBSTITUTE HERE.

Let's pick 5 values for x ; $x = \{-2, -1, 0, 1, 2\}$

① FIND THE 5 (x, y) pairs by completing
the table:

x	$y = 2x + 3$	(x, y)
-2	$y = 2() + 3$	$(-2,)$
-1	$y = 2() + 3$	$(-1,)$
0	$y = 2() + 3$	$(0,)$
1	$y = 2() + 3$	$(1,)$
2	$y = 2() + 3$	$(2,)$

② GRAPH THE 5 points you found, i.e., graph these.

①

In the bell exercise you graphed $y = 2x + 3$ and you found it was a line, this is called a LINEAR EQUATION.

Can you tell just by looking AT AN EQUATION if its graph will be a line? Here is how:

if the x terms and y terms are only being added or subtracted and if their exponents are 1, it is a line

$$y' = 2x' + 3$$

Let's try some examples, linear or NOT linear?

① $3x + 4y = 6$

② $2x + 3x + y = 9$

③ $x^2 + y = 1$

④ $\frac{x}{y} = 1$

⑤ $\frac{x}{2} + y = 6$

⑥ $xy + 3 = y$

②

GRAPH using THE "pick 5 x 'T-table'"

METHOD: $x + 2y = 6$

💡 • Solve For y First

• use $x = \{-2, -1, 0, 1, 2\}$

THIS WAS EX 2 PG 219

Linear OR NOT Linear?

Ⓐ $y = 5 - 2x$

Ⓑ $2xy - 5y = 6$

Ⓒ $3x + 9y = 15$

Ⓓ $\frac{1}{3}y = -1$

These were ex 1 Pg. 218

EX) GRAPH using THE "pick 5x, 'T-TABLE'"

METHOD: ① $y = 2x + 8$

② $y = 4$

(3)

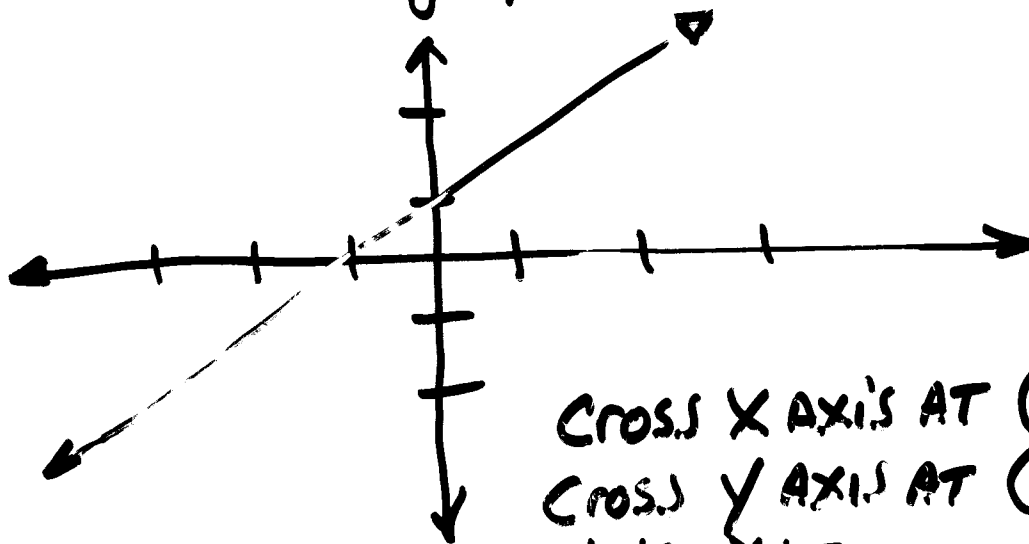
$y = 4 \Rightarrow$ horizontal line, "STUCK ON $y = 4$ "

$x = -2 \Rightarrow$ vertical line, "STUCK ON $x = -2$ "

All lines (except horizontal and vertical lines) cross BOTH the x and y axes.

X-intercept (X_{int}) X value of the point where a graph crosses the x -axis

y-intercept Y value of the point where a graph crosses the y -axis.



CROSS x AXIS AT $(-1, 0)$
 CROSS y AXIS AT $(0, 1)$
 -1 is X_{int}
 1 is Y_{int}

HOMEWORK:

- Learn new definitions:
 - $\Rightarrow$ linear equation
 - $\Rightarrow$ horizontal
 - $\Rightarrow$ vertical
 - $\Rightarrow$ x intercept
 - $\Rightarrow$ y intercept
- Know how to recognize a linear equation.
- Know how to graph an equation using the "pick 5 values of x , T-Table" method. including "solving for y " first.
- Pg. 221 # 26, 28, 29, 34.