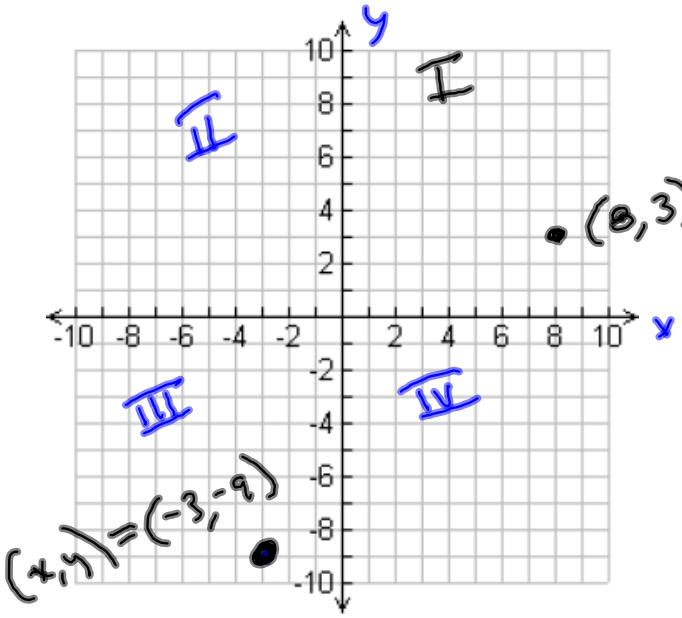
Amnesty Day —

Any late or less-than-5-pts homework?

Turn it in Monday for $\frac{1}{2}$-credit.

If your homework is in before I grade it, it's on-time.

§ 3.1 Graphing (Linear) Equations.



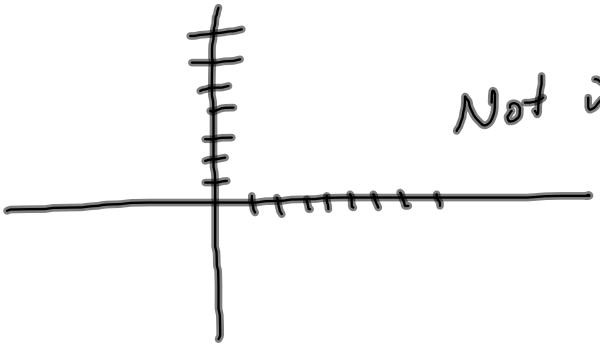
Cartesian Plane.

(x, y)

• (8,3) ordered

(x, y) = (-3, -9)

Feb 2-3:24 PM



Not interested in tickmarks.
To earn points on graphs, label key points as ordered pairs.

Example

$3x-2y=6$

x	y
0	-3
2	0

$3(0)-2y=6$

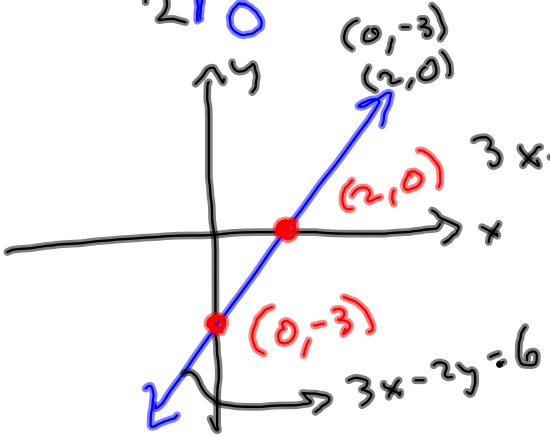
$-2y=6$

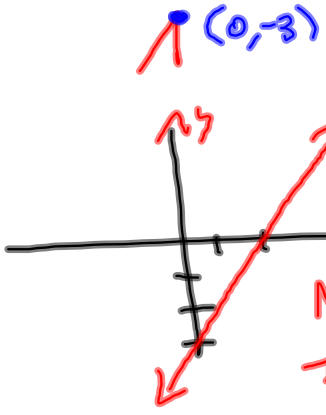
$y=-3$

$3x-2(0)=6$

$3x=6$

$x=2$





both graphs are OK

23.7

Not labeling the points as ordered pairs.

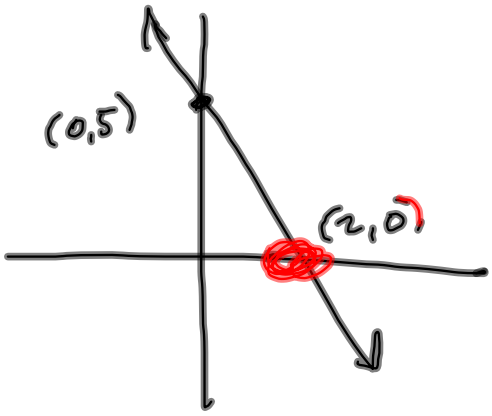
Sep 10-9:26 AM

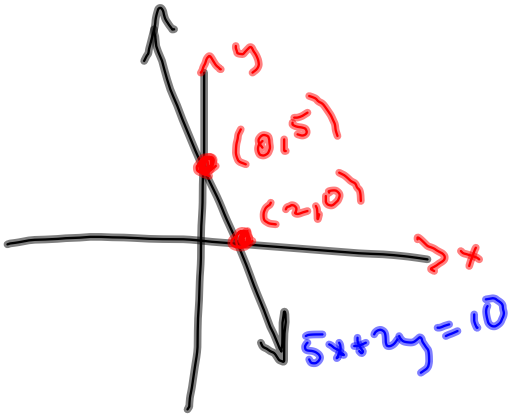
$5x + 2y = 10$

x	y
0	5
2	0

(0,5)

(2,0)





Determine if an ordered pair is a solution

père
pear
pare

$x+y=7$

$(1,6)$: $1+6=7$? Yes

$(-3,11)$: $-3+11=7$? No

Does the (x,y) pair "satisfy the equation."

Graph by plotting points.

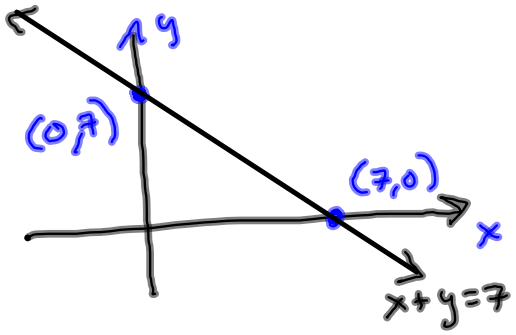
$x+y=7$

x	y
0	
	0

Finding x- & y-intercepts is always good.

x	y
0	7
7	0

All you need for a line is 2 points.



preferably the *x*- and *y*-intercepts.

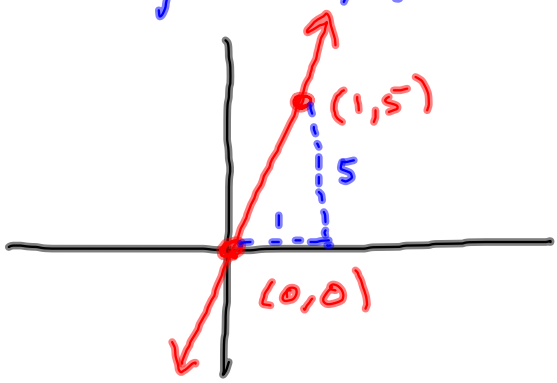
Notice how "sparse" this graph is. For speed and efficiency, focus on the important stuff, like the intercepts.

$y = 5x$ $3x + 2y = 0$

Intercept method yields only one point, when line passes thru the origin. So, pick another point.

$y = 5x$

x	y
0	0
1	5



$y = 5x = \frac{5}{1}x$

$= \frac{\text{up } 5}{\text{right } 1}$

Another (Linear) Equation.

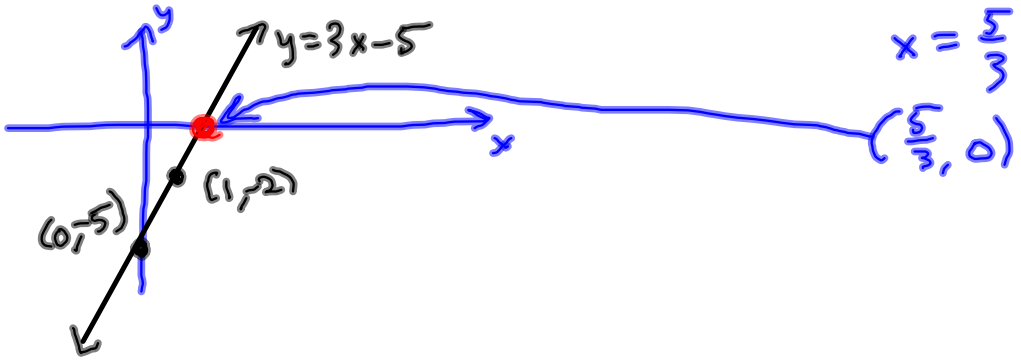
$y = 3x - 5$

x-int: $y = 0$

$0 = 3x - 5 = 0$

$3x = 5$

$x = \frac{5}{3}$



Your textbook wants you to plug in points at random. This won't be good enough for most graphs on homework and tests. What matters? INTERCEPTS.

In the case where there is only one intercept, you will have to find another point that isn't an intercept.

In Chapter 3, our focus is on LINES. We will devote ourselves to other concepts in later chapters, even though some other things are sprinkled into Chapter 3:

- Quadratics: Anything with an x^2 in it, we IGNORE, for now.
- Absolute Value: Anything with a $|x|$ in it (or a $|5x - 3|$), we IGNORE, for now.

Plotting anything but lines by just plugging in points is a waste of time. We have better ways of attacking these other things. It's enough, for now, to know that 3.1 #s 21 - 26 are NOT LINEAR.

38 $y = 3x^2$ Not a line

So, when doing practice problems that I'm NOT collecting, be sure to omit (leave out) the following:

3.1 #s 33, 34, 37 - 40, 45, 46. Inappropriate, imo.

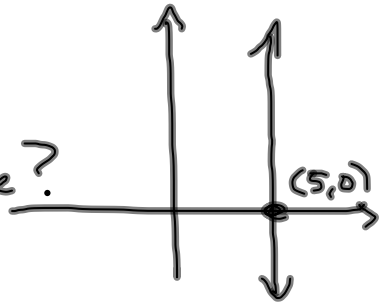
46 $y = |x-1|$ Not a line.

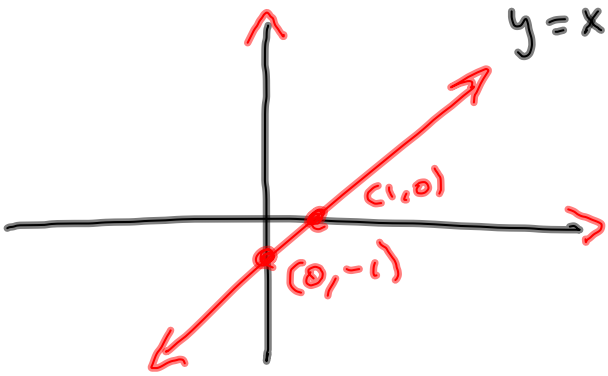
Anything I ask you to graph on Chapter 3 Test will either be a line or have a line as its boundary.

Linear: x & y to the 1st power.

$y = 5x$, $y = 17$ $3x + 2y = 7$ $x = 5$

what does $y = |x-1|$ look like?





x	y
0	-1
1	0

$|3| = 3$ $|4| = 4$

$|x| = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$ $|-3| = 3$ $|-5| = 5$

$|\square| = \begin{cases} \square & \text{if } \square \geq 0 \\ -\square & \text{if } \square < 0 \end{cases}$ $|-5| = -(-5) = 5$

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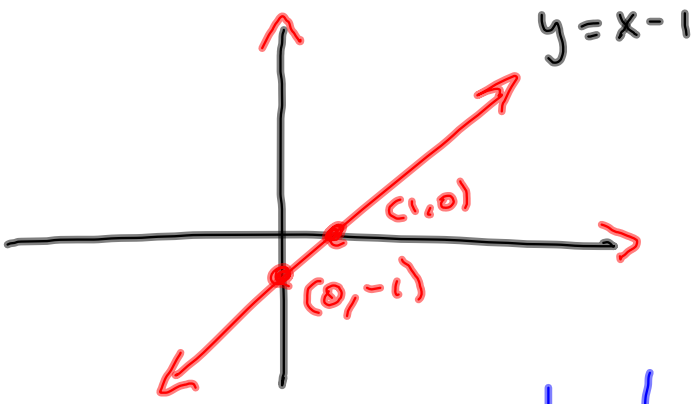
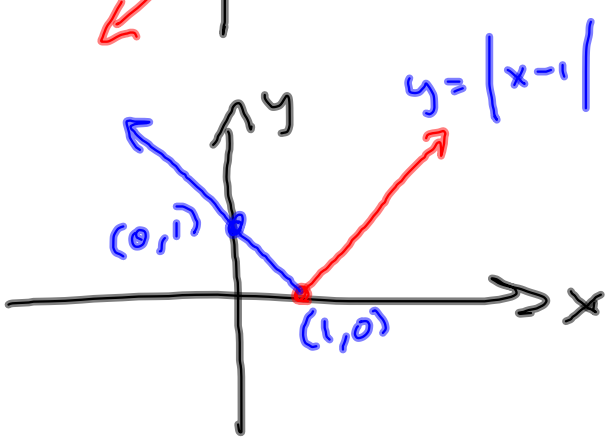
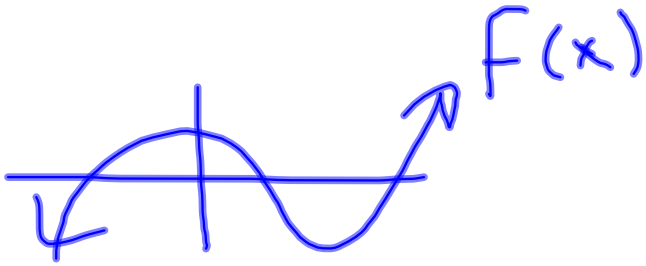
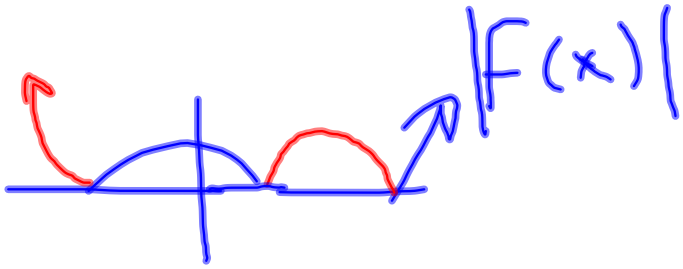
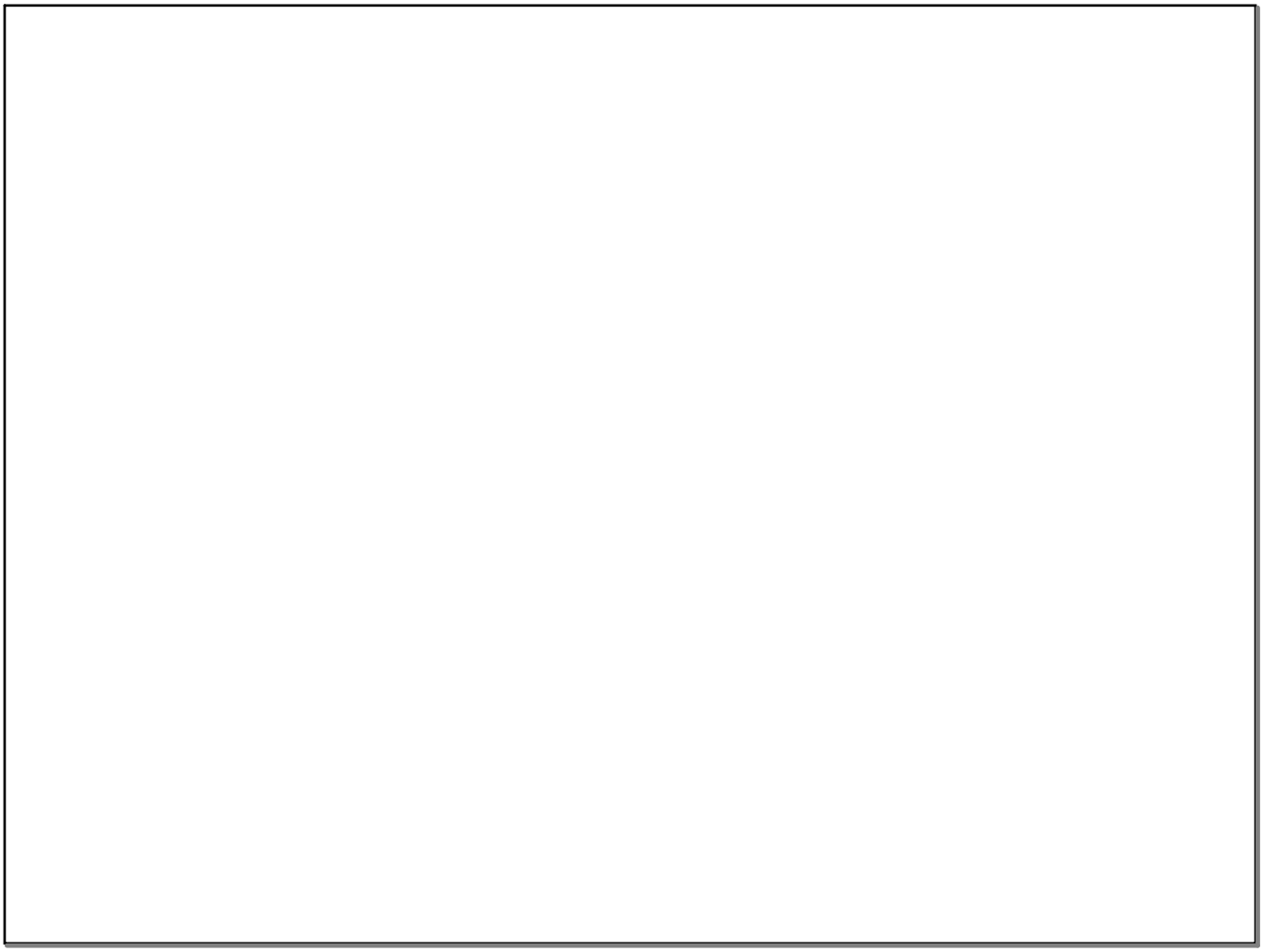


$$y = |x-1| = \begin{cases} x-1 & \text{if } x-1 \geq 0 \\ -(x-1) & \text{if } x-1 < 0 \end{cases}$$









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