MAT 011, Linear Equations in 2D, Part 2 (3.3)   Name ___KEY___

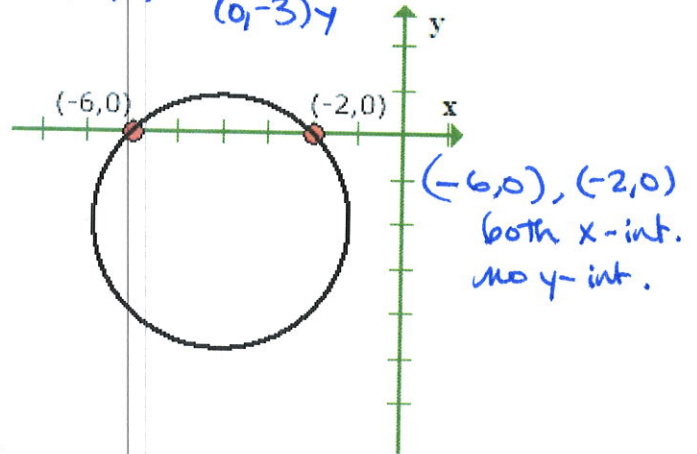1. For each of the graphs below, list all the x- and y-intercepts.

a.
(0,3),
  y   x (15,0)

b.
(-3,0)   (0,6)   (1,0)   (2,0)
  x   y   x   x

estimate.
(0, 5.9)? y

c.
x (-2.3,0)   (4.3,0) x

(0,-1.9) y

d. (-4,0)x
         (0,-3)y   (2,0) x

e.
(-6,0)   (-2,0)   x

(-6,0), (-2,0)
both x-int.
no y-int.

f.
(-3,0)
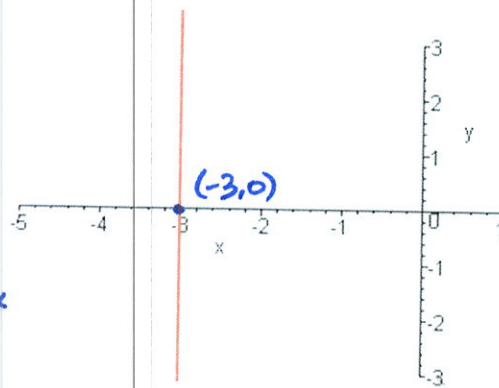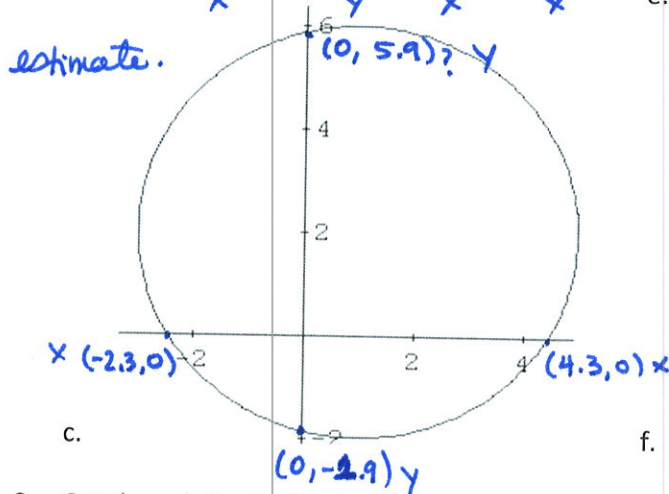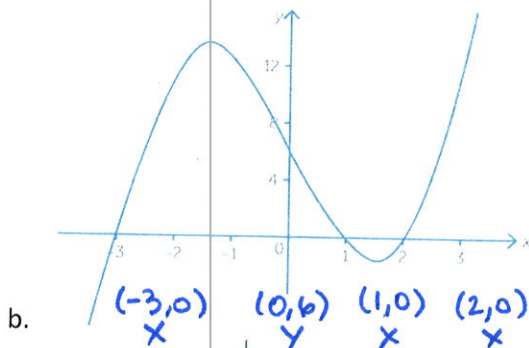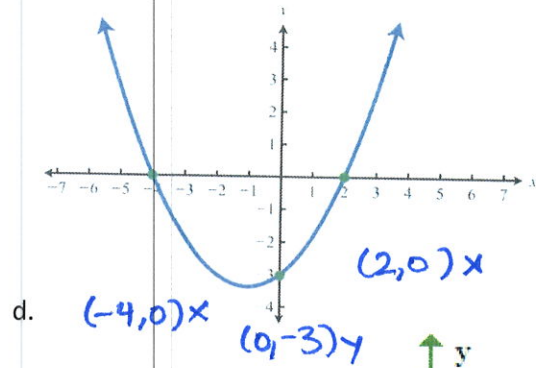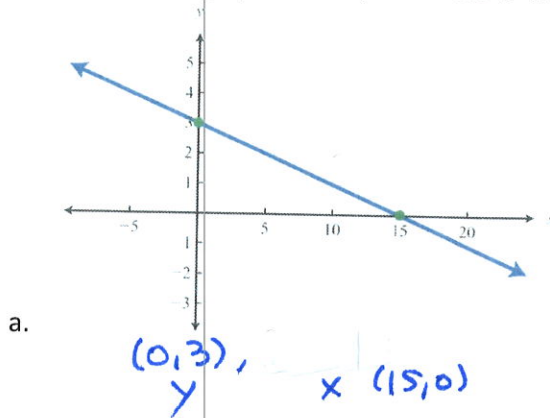
2. Graph each line below by plotting intercepts. Recall,
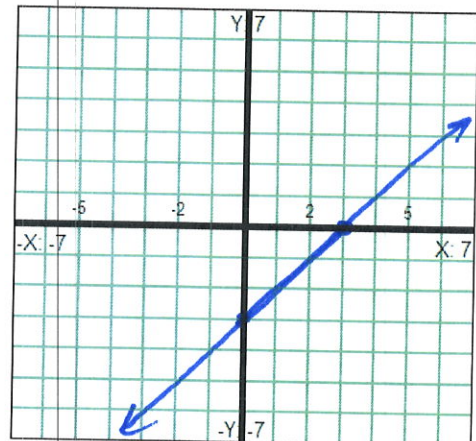   the x-intercept is $(x, 0)$, and the y-intercept is $(0, y)$.
   a. $x - y = 3$

   y=0
   x = 3   (3,0)

   x= 0
     -y=3   (0,-3)
      y=-3

b.

$x=0 \quad 2y=6$

$(0,3)^{y=3}$

$y=0$

$-x=6$

$x=-6$

$(-6,0)$

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c.

$x=0 \quad (0,6)$

$y=6$

$y=0=3x+6$

$\underline{-6 \qquad -6}$

$\dfrac{-6}{3}=\dfrac{3x}{3} \quad x=-2 \qquad (-2,0)$

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d. $y=2x$

$x=0 \Rightarrow y=0 \quad (0,0)$

pick another

point!

$x=1 \quad y=2 \quad (1,2)$

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e. $x=-1$

f. $y=5$

---

g.

$x=0$

$y=1 \quad (0,1)$

$y=0 = -\dfrac{2}{3}x+1$

$\underline{\qquad -1}$

$\left(-1=-\dfrac{2}{3}x\right)\dfrac{-3}{2}$

$\dfrac{3}{2}=x \quad (3/2,0)$

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h.

$x=0$

$-6y+3=0$

$\underline{\qquad -3 \quad -3}$

$\dfrac{-6y}{-6}=\dfrac{-3}{-6}$

$y=\frac{1}{2} \qquad (0,\frac{1}{2})$

$y=0$

$9x+3=0$

$\underline{\qquad -3 \quad -3}$

$\dfrac{9x}{9}=\dfrac{-3}{9}$

$x=-\frac{1}{3} \qquad (-1/3,0)$

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b. $-x+2y=6$

c. $y=3x+6$

d. $y=2x$

e. $x=-1$

f. $y=5$

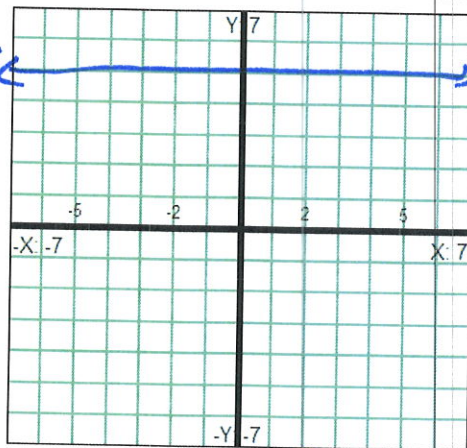g. $y=-\dfrac{2}{3}x+1$

h. $9x-6y+3=0$

b.
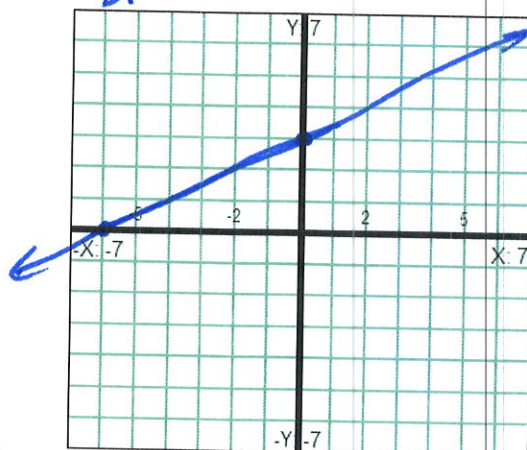
c.
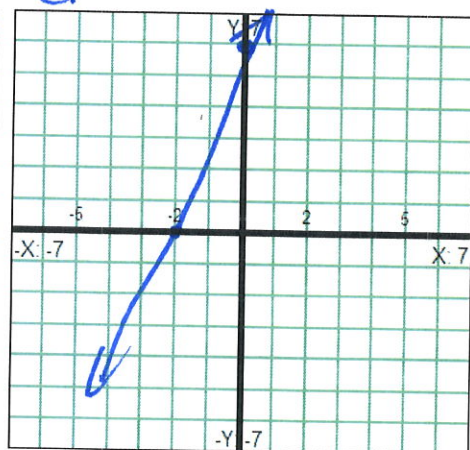
d.
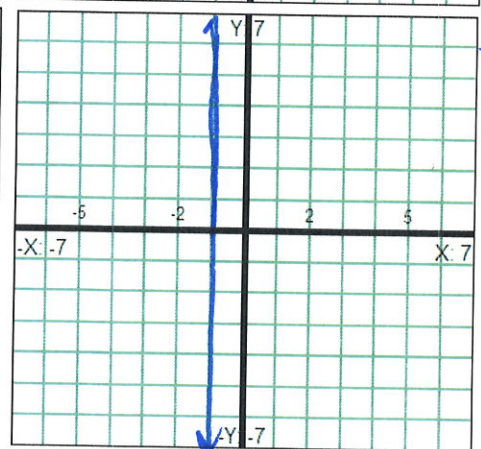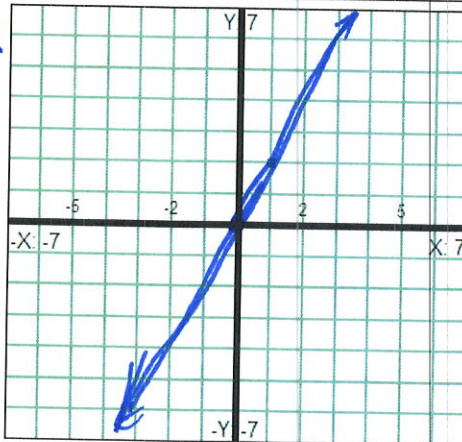
e.

f.

g.

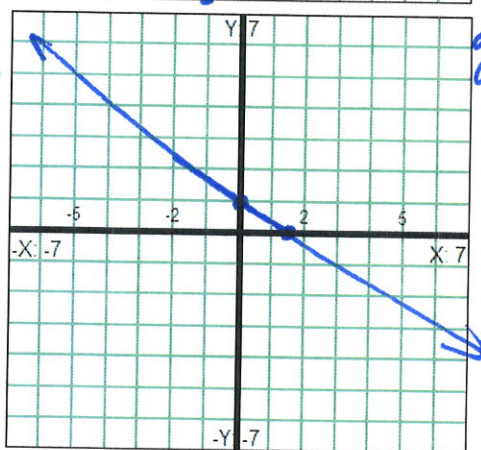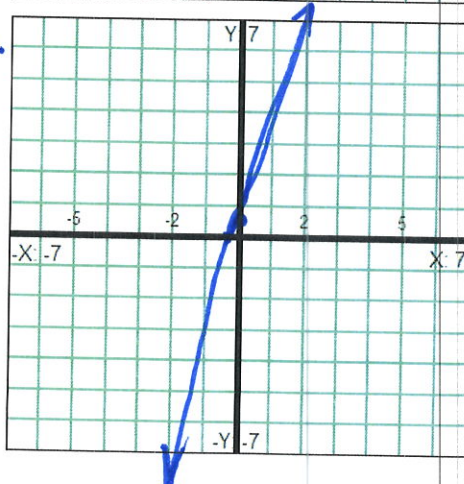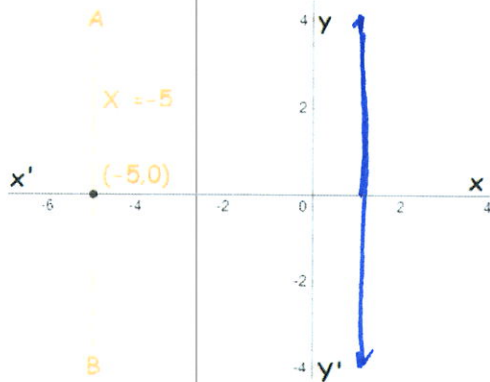**h.**

3. Do all lines have an x-intercept? Do all lines have a y-intercept?

no to both

vertical lines have no y-intercept (except for x=0)
horizontal lines have no x-intercept (except y=0)

4. Parallel lines don't intersect. Below is a graph of $x = -5$ Draw a line parallel to this line that goes through the point $(1,0)$. What is the equation of the line?

$X = 1$

5. Below is a graph of the lines $y = 2x + 3$ and $y = 2x$. What do you notice about the equations? Are the lines parallel?

the coefficient of
X is the same

the intercepts are
different.