Ex 1:
Determine whether each point lies on the graph of the equation.

$y = \frac{1}{3}x^3 - 2x^2$ **a)** $\left(2, -\frac{16}{3}\right)$ $\boxed{\text{Yes}}$

$-\frac{16}{3} = \frac{1}{3}(2)^3 - 2(2)^2$

$-\frac{16}{3} = \frac{8}{3} - \frac{8 \cdot 3}{1 \cdot 3}$

$-\frac{16}{3} = \frac{8}{3} - \frac{24}{3}$ $\quad -\frac{16}{3} = -\frac{16}{3}$ ✓

b) $(-3, 9)$ $\boxed{\text{No}}$

$9 = \frac{1}{3}(-3)^3 - 2(-3)^2$

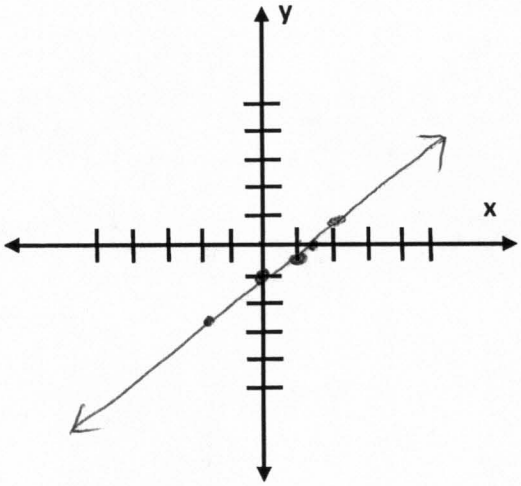
$9 = -9 - 18$

$9 = -27$ FALSE

Ex 2:
Complete the table. Use the resulting solution points to sketch the graph of the equation.

$y = \frac{3}{4}x - 1$

x	-2	0	1	$\frac{4}{3}$	2
y	-2.5	-1	$-\frac{1}{4}$	0	$.5$
(x, y)	$(-2, -2.5)$	$(0, -1)$	$(1, -\frac{1}{4})$	$(\frac{4}{3}, 0)$	$(2, .5)$



Note: To find an intercept, set the opposite variable equal to zero.

Ex 3:
Find the x- and y-intercepts of the graph of the equation.

$y = -|x + 10|$

x-intercept

$0 = -1|x + 10|$
$-1 \qquad -1$

$0 = |x + 10|$

$x + 10 = 0$
$-10 \quad -10$

$\boxed{x = -10}$

y-intercept

$y = -|0 + 10|$

$y = -|10|$

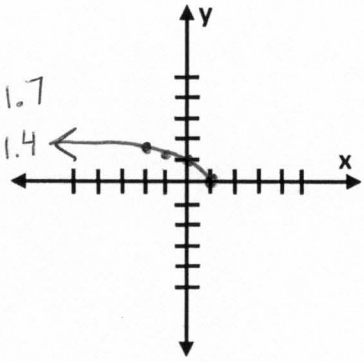
$\boxed{y = -10}$

Ex 4:

Sketch the graphs of equations by plotting points until you are familiar with the parent functions.

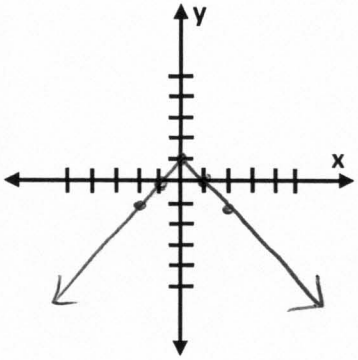
a) $y=\sqrt{1-x}$

x	y
-2	$\sqrt{3}\approx 1.7$
-1	$\sqrt{2}\approx 1.4$
0	1
1	0
~~2~~	



b) $y=1-|x|$

x	y
-2	-1
-1	0
0	1
1	0
2	-1



Equation of a Circle: $(x-h)^2+(y-k)^2=r^2$

Center: (h,k) Radius: r

Ex 5:

Write the standard form of the equation of the circle with the given characteristics.

Center: $(3,-2)$; solution set: $(-1,1)$

h k x y

$(-1-3)^2+(1-(-2))^2=r^2$

$16+9=r^2$

$\sqrt{25}=\sqrt{r^2}$

$r=5$

$(x-3)^2+(y-(-2))^2=5^2$

$\boxed{(x-3)^2+(y+2)^2=25}$

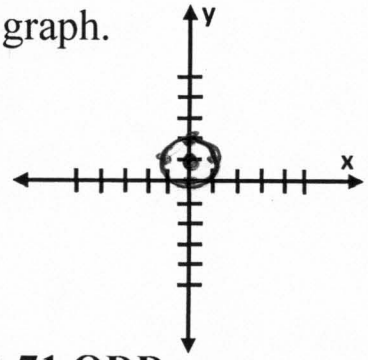
Ex 6:

Find the center and radius of the circle, and sketch its graph.

$x^2+(y-1)^2=1$

$(x-0)^2+(y-1)^2=1^2$

Center: $(0,1)$ Radius: 1



Assignment 1.2

Pg. 22 Vocab #'s 1-6 Problem Set #'s 1-19 ODD, 33-71 ODD

Sketch all graphs by plotting points.

Check Answers Pg. A78