NAME:_____

7.4 Solving Absolute Value Equations

$|y| = 8$

$|p| = -6$

$|2x - 3| = 5$

Steps to solve Absolute Value Equations

1)

2)

3)

$2|x - 8| + 3 = 15$

$|x + 5| - 8 = 15$

$4 + 2|3x| = 28$

$-5\left|\frac{3}{8}x - \frac{1}{6}\right| - 8 = 12$

At the start of the season Mr. Sullivan has to make sure that all the basketballs are inflated correctly. They must be 9 pounds per square inch (psi) with an error of .5 psi.

What is the maximum and minimum possible psi for all the basketballs?

Try These!

$|3x - 1| = 13$

$-5|x + 3| - 3 = -15$

Summarize your notes:

Directions: Solve the equation.		
1) $\|x\| = 5$	2) $\|r\| = \frac{1}{2}$	3) $\|3p + 7| = 4$
4) $3\|13 - 2t| = 15$	5) $4\|2k + 3| - 2 = 6$	

Directions: Describe and correct the error in solving the absolute value equation.

6)

$$|x + 4| = 13$$
$$x + 4 = 13$$
$$x = 9$$

Directions: Solve the equation if possible.

7) $|x - 1| + 5 = 2$

8) $-3\left|1 - \frac{2}{3}v\right| = -9$

9) $-8 - 9|4p + 2| = -35$

QUICK REVIEW….find the equation of the line with the given information.

1) (-2, 4), (5, 18)

2) Through (4, -5) and parallel to y = 2x -1

7.4 Application/Extension

1) $|m - 6| = 4$

2) $2|x + 3| - 5 = -3$

3) TimmyKat is on a special CELEBRITY JEOPARDY. He's cruising in first place with $5300, when he hits a DOUBLE JEOPARDY question. He decides to risk $2700 on the question which means he'll gain that amount if he's right or lose it if he's wrong.

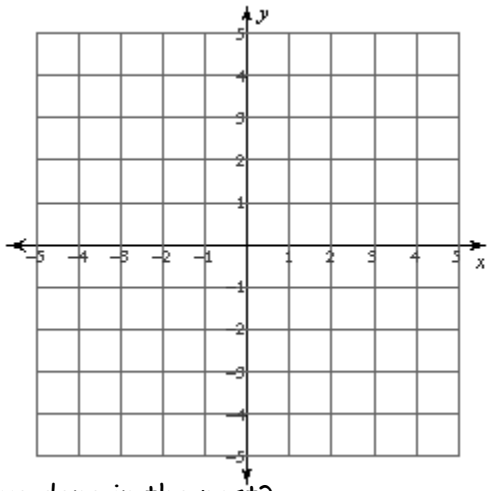
a) Use the following to plug in values for the situation above.

$$|\, ending\ point\ -\ current\ points\,| = points\ at\ risk$$

b) Solve the equation you made above.

4) Use the equation f(x) = $|x + 2| - 1$ and complete the table, plot the points and answer the questions.

X	F(x)
1	
-5	
4	
	-1
	1
	2



a) What is different about this table than ones you've done in the past?

b) Describe the shape of graph.

COMING UP!....substitute (x + 3) for y in the following equations and then solve for x.	
1) 3x + y = 15	2) x + 2y = 21