Linear Functions
A2RCC U5D7 Practice Quiz #2

Name Key

1) Solve using *the quadratic formula*. Round solutions to the *nearest hundredth*.

$2x^2 + 23 = 14x$ $\quad a=2 \quad b=-14 \quad c=23$

$2x^2 - 14x + 23 = 0$

$$x = \frac{14 \pm \sqrt{(-14)^2 - 4(2)(23)}}{2(2)}$$

$$= \frac{14 \pm \sqrt{12}}{4}$$

$$\frac{14+\sqrt{12}}{4} = 4.37$$

$$\frac{14-\sqrt{12}}{4} = 2.63$$

2) Solve using *the square root property*. Express solutions in simplest radical form.

$2(7x-5)^2 - 75 = 75$

$+75 \quad +75$

$$\frac{2(7x-5)^2}{2} = \frac{150}{2}$$

$$\sqrt{(7x-5)^2} = \sqrt{75}$$

$$7x-5 = \pm\sqrt{75}$$

$$7x-5 = \pm 5\sqrt{3}$$

$\sqrt{75}$

$\sqrt{25}\sqrt{3}$

$5\sqrt{3}$

$7x-5 = \pm 5\sqrt{3}$

$+5 \quad +5$

$$\frac{7x}{7} = \frac{5 \pm 5\sqrt{3}}{7}$$

$$x = \frac{5 \pm 5\sqrt{3}}{7}$$

OR $\frac{5}{7} \pm \frac{5}{7}\sqrt{3}$

3) Solve by *factoring*. $4x^2 + 11x - 20 = 0$

$(4x-5)(x+4) = 0$

$4x-5=0 \qquad x+4=0$

$$x = \frac{5}{4} \qquad x = -4$$

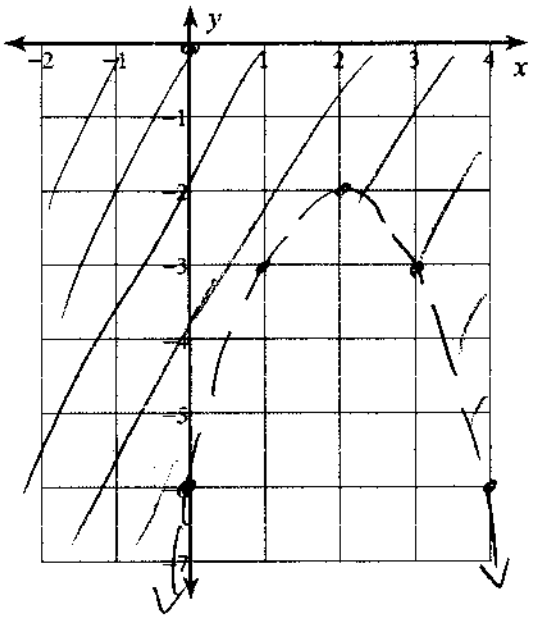
4) Graph the quadratic inequality. $y > -x^2 + 4x - 6$

$0 > -(0)^2 + 4(0) - 6$

$0 > -6$

yes!

x	y
0	-6
1	-3
2	-2
3	-3
4	-6



Name one point in the solution set. (1, -1)

(answers vary)

5) Solve the quadratic inequality. Represent your solution set using set notation **and** on a number line.

$5 - 2x^2 \leq -3x$

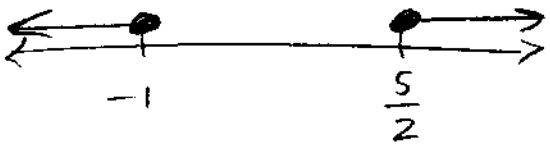
$-5 + 2x^2 \quad +2x^2 - 5$

$0 \leq 2x^2 - 3x - 5$

$2x^2 - 3x - 5 = 0$

$(2x - 5)(x + 1) = 0$

$x = \frac{5}{2} \quad x = -1$



$x \leq -1$ OR $x \geq \frac{5}{2}$

6) Put the following quadratic equations in vertex form and identify the turning point and whether it is a maximum or minimum.

a) $y = x^2 + 8x - 1$

$y = (x^2 + 8x + 16) - 16 - 1$

$y = (x + 4)^2 - 17$

Turning Point (-4, -17)

Circle: Maximum or Minimum

(x^2 is "+")

b) $y = -2x^2 + 16x - 27$

$y = -2(x^2 - 8x + 16) + 32 - 27$

$y = -2(x - 4)^2 + 5$

Turning Point (4, 5)

Circle: Maximum or Minimum

(x^2 is "-")