

**LT #5: Completing the square**

Complete the square (2 pts each)

1.  $x^2 + 22x + \underline{\quad} = (x + \underline{11})^2$

$\frac{22}{2} = 11$

2.  $x^2 + 5x + \underline{\quad} = (x + \underline{\quad})^2$

$(\frac{5}{2})^2 = \frac{25}{4}$

Solve by completing the square. (4 pts)

3.  $x^2 + 2x - 24 = 0$

$\frac{2}{2} \neq (-1)^2 \quad x^2 + 2x + 1 = 24 + 1$

$\sqrt{(x+1)^2} = \sqrt{25}$

$x+1 = \pm 5 \quad x = -1 \pm 5 \quad \begin{matrix} -1+5 \\ -1-5 \end{matrix}$

1. Blank 1: 121

Blank 2: 11

2. Blank 1: 25/4

Blank 2: 5/2

3. 4, -6

/8

**LT #6: Quadratic Formula**

For #4-5, find the value of the discriminant (showing your work!). Then circle whether the function will have one, two, or no real solutions. (3 pts each)

4.  $y = x^2 + 5x + 8$

$b^2 - 4ac$

$5^2 - 4(1)(8)$

$25 - 32$

$-7$

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

$2x^2 + x - 2x - 1 = 0$

$2x^2 - x - 1 = 0$

$b^2 - 4ac$

$(-1)^2 - 4(2)(-1)$

$1 + 8$

4. -7

Circle one:

One Sol. Two Sol. **No Sol.**

5. 9

Circle one:

One Sol. **Two Sol.** No Sol.

6. 13, -2

$-2 \pm \sqrt{7}$

7.     ,     

/14

Solve by the quadratic formula (4 pts each)

6.  $3x^2 + 5x - 2 = 0$

$\frac{-5 \pm \sqrt{(5)^2 - 4(3)(-2)}}{2(3)} = \frac{-5 \pm \sqrt{25 + 24}}{6}$

7.  $x^2 + 4x - 3 = 0$

$\frac{-4 \pm 2\sqrt{7}}{2}$

$\frac{-4 \pm \sqrt{16 - 4(1)(-3)}}{2(1)}$

$\frac{-4 \pm \sqrt{16 + 12}}{2} = \frac{-4 \pm \sqrt{28}}{2}$

$\frac{-5 \pm \sqrt{49}}{6}$

$\frac{-5 \pm 7}{6}$

$\frac{-5+7}{6} = \frac{2}{6}$

$\frac{-5-7}{6} = \frac{-12}{6}$