 Name_____

Solving Quadratic Equations By Completing the Square

Date_____ Period____

Solve each equation by completing the square.

1) $p^2 + 14p - 38 = 0$

$p^2+14p+49 = 38+49$

$(p+7)^2 = 87$ $\quad p+7 = \pm\sqrt{87}$

$p = -7 \pm \sqrt{87}$

2) $v^2 + 6v - 59 = 0$

3) $a^2 + 14a - 51 = 0$

$a^2+14a = 51$

$+49 \quad +49$

$(a+7)^2 = 100$

$a+7 = \pm 10$

$-7+10 = 3$

$-7-10 = -17$

4) $x^2 - 12x + 11 = 0$

5) $x^2 + 6x + 8 = 0$

$x^2+6x+9 = -8+9$

$\sqrt{(x+3)^2} = \sqrt{1}$

$x+3 = \pm 1$

$-3+1 = -2$

$-3-1 = -4$

6) $n^2 - 2n - 3 = 0$

7) $x^2 + 14x - 15 = 0$

$x^2+14x = 15$

$+49 \quad +49$

$(x+7)^2 = 64$

$x+7 = \pm 8$

$x = -7 \pm 8$

$-7+8 = 1$

$-7-8 = -15$

8) $k^2 - 12k + 23 = 0$

9) $r^2 - 4r - 91 = 7$

$r = 2 \pm \sqrt{102}$

10) $x^2 - 10x + 26 = 8$

11) $k^2 - 4k + 1 = -5$

12) $b^2 + 2b = -20$