Name : _____ Score : _____

Teacher : _____ Date : _____

Solve Quadratic Equations by Completing the Square

Solve each equation by completing the square.

1) $24w^2 + 72w + 48 = 0$

2) $x^2 - 19x + 20 = 0$

3) $y^2 - 27y - 72 = 0$

4) $g^2 + 14g - 4 = 0$

5) $12x^2 + 71x - 45 = 0$

6) $6y^2 - 25y + 8 = 0$

7) $p^2 - 3p - 10 = 0$

8) $20r^2 + 37r - 8 = 0$

9) $s^2 - 15s - 8 = 0$

10) $8k^2 + 80k + 54 = 0$

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Solve each equation by completing the square.

1) $24w^2 + 72w + 48 = 0$

$w = \{ -2 , -1 \}$

2) $x^2 - 19x + 20 = 0$

$x = \left\{ \frac{19 + \sqrt{281}}{2} , \frac{19 - \sqrt{281}}{2} \right\}$

3) $y^2 - 27y - 72 = 0$

$y = \left\{ \frac{27 + 3\sqrt{113}}{2} , \frac{27 - 3\sqrt{113}}{2} \right\}$

4) $g^2 + 14g - 4 = 0$

$g = \{ -7 + \sqrt{53} , -7 - \sqrt{53} \}$

5) $12x^2 + 71x - 45 = 0$

$x = \left\{ \frac{-71 + \sqrt{7201}}{24} , \frac{-71 - \sqrt{7201}}{24} \right\}$

6) $6y^2 - 25y + 8 = 0$

$y = \left\{ \frac{25 + \sqrt{433}}{12} , \frac{25 - \sqrt{433}}{12} \right\}$

7) $p^2 - 3p - 10 = 0$

$p = \{ 5 , -2 \}$

8) $20r^2 + 37r - 8 = 0$

$r = \left\{ \frac{-37 + 7\sqrt{41}}{40} , \frac{-37 - 7\sqrt{41}}{40} \right\}$

9) $s^2 - 15s - 8 = 0$

$s = \left\{ \frac{15 + \sqrt{257}}{2} , \frac{15 - \sqrt{257}}{2} \right\}$

10) $8k^2 + 80k + 54 = 0$

$k = \left\{ \frac{-10 + \sqrt{73}}{2} , \frac{-10 - \sqrt{73}}{2} \right\}$