Algebra 1 8.9
Factor perfect square trinomials
Solve equations involving perfect squares
Solve equations using square root property (SRP)
perfect square .
zero product property
prime
square root property

whiteboards
speed dating and/or eggscellent factoring

Quiz moves to Fri.
Test Ch. 8 Mon.

Examples 3–4 Solve each equation.

7. $4x^2 = 36$

$\sqrt{4x^2} = \sqrt{36}$

$2x = \pm 6$

$\frac{2x}{2} = \frac{6}{2}$ $\quad \frac{2x}{2} = \frac{-6}{2}$

$x = 3$ $\quad x = -3$

Can you write it as a perfect square?

8. $25a^2 - 40a = -16$

$+16 \quad +16$

$25a^2 - 40a + 16 = 0$

$\sqrt{(5a - 4)^2} = \sqrt{0}$

$5a - 4 = \pm 0$

$5a - 4 = 0$

$+4 \quad +4$

$5a = 4$

$\frac{5a}{5} = \frac{4}{5}$ $\quad a = \frac{4}{5}$

9. $64y^2 - 48y + 18 = 9$

$-9 \quad -9$

$64y^2 - 48y + 9 = 0$

$\sqrt{(8y - 3)^2} = \sqrt{0}$

$8y - 3 = \pm 0$

$8y - 3 = 0$

$+3 \quad +3$

$\frac{8y}{8} = \frac{3}{8}$

$y = \frac{3}{8}$

10. $\sqrt{(z + 5)^2} = \sqrt{47}$

$z + 5 = \pm 6.9$

$z + 5 = 6.9$ $\quad$ $z + 5 = -6.9$

$-5 \quad -5$ $\quad$ $-5 \quad -5$

$z = 1.9$ $\quad$ $z = -11.9$

What if it isn't a perfect square?

Examples 3–4 Solve each equation.

34. $4m^2 - 24m + 36 = 0$

$\sqrt{(2m-6)^2} = \sqrt{0}$

$2m - 6 = \pm 0$

$2m - 6 = 0$

$+6 \quad +6$

$\frac{2m}{2} = \frac{6}{2}$

$m = 3$

35 $\sqrt{(y-4)^2} = \sqrt{7}$

$y - 4 = \pm 2.6$

$y - 4 = 2.6$ $\qquad$ $y - 4 = -2.6$

$+4 \quad +4$ $\qquad$ $+4 \quad +4$

$y = 6.6$ $\qquad$ $y = -1.4$

What if it isn't a perfect square?

38. $x^2 + 8x + 16 = 25$

$\sqrt{(x+4)^2} = \sqrt{25}$

$x + 4 = \pm 5$

$x + 4 = 5$ $\quad$ $x + 4 = -5$

$-4 \quad -4$ $\quad$ $-4 \quad -4$

$x = 1$ $\quad$ $x = -9$

$9x^3 = 25x$

$-25x \quad -25x$

$9x^3 - 25x = 0$

$x(9x^2 - 25) = 0$

$x(3x-5)(3x+5) = 0$

$x = 0$ $\quad$ $3x - 5 = 0$ $\quad$ $3x + 5 = 0$

$3x = 5$ $\quad$ $3x = -5$

$x = \frac{5}{3}$ $\quad$ $x = -\frac{5}{3}$

39. $5x^2 - 60x = -180$

$+180 \quad +180$

$\frac{5x^2}{5} - \frac{60x}{5} + \frac{180}{5} = 0$

$5(x^2 - 12x + 36) = 0$

$(x-6)^2$

$5(x-6)^2 = 0$

$\sqrt{(x-6)^2} = \sqrt{0}$

$x - 6 = \pm 0$

$+6 \quad +6$

$x = 6$

Easter eggs?