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

$(x+3)(\quad)$

$x+3$

$x^2+6x+9 = (x+3)^2$

$x \qquad 3$

$(x+3)(x+3)$

Quiz Thurs.

Test Ch. 8 moves to Mon.

Examples 3–4 Solve each equation.

7. $4x^2 = 36$

$-36 \quad -36$

$4x^2 - 36 = 0$

$(2x - 6)(2x + 6) = 0$

Can you write it as a perfect square?

$2x - 6 = 0$

$+6 \quad +6$

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

$x = 3$

$2x + 6 = 0$

$-6 \quad -6$

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

$x = -3$

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

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

$\sqrt{x^2} = \sqrt{9}$

$x = \pm 3$

± if Shortcut

$$25a^2 - 40a = -16$$
$$+16 \quad +16$$

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

$$(5a - 4)^2 = 0$$

$$(5a-4)(5a-4) = 0$$

$$5a - 4 = 0$$

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

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

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

$-9 \quad -9$

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

$(8y - 3)^2 = 0$

$(8y - 3)(8y - 3) = 0$

$8y - 3 = 0$

$8y = 3$

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

10. $(z + 5)^2 = 47$

$\sqrt{\quad}$ $\sqrt{\quad}$

$z + 5 = \pm 6.8557$

$-5 \quad -5$

≈ 1.9

$z = 6.8557 - 5 = 1.8557$

$-6.8557 - 5 = -11.8557$

≈ -11.9

What if it isn't a perfect square?

Examples 3–4 Solve each equation.

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

$(2m-6)^2 = 0$

$(2m-6)(2m-6) = 0$

$2m - 6 = 0$

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

$m = 3 \qquad m = 3$

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

$y - 4 = \pm 2.65$

$y - 4 = 2.65 \quad +4 \quad +4 \quad = 6.65 \approx 6.7$

$y - 4 = -2.65 \quad +4 \quad +4 \quad = 1.35 \approx 1.4$

$y =$

What if it isn't a perfect square?

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

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

$x + 4 = \pm 5$

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

$x = 1$

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

$x = -9$

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

$+180 \quad +180$

$5x^2 - 60x + 180 = 0$

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

$\frac{5(x-6)^2}{5} = \frac{0}{5}$

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

$x - 6 = \pm 0$

$x - 6 = 0$
$+6 \quad +6$

$x = 6$

$x - 6 = -0$
$+6 \quad +6$

$x = 6$

Easter eggs if time

factor

Solve

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