Algebra 1 8.5

Use the distributive property to factor polynomials

Solve quadratic equations by factoring

quadratic

factor

distributive property

greatest common factor (GCF)

zero product property

whiteboards

$2x^3+8x^2+12x$

$6a^2 - 3a = 0$

$3a(2a - 1) = 0$ matching activity
Whiteboards

KeyConcept Zero Product Property

Words	If the product of two factors is 0, then at least one of the factors must be 0.
Symbols	For any real numbers a and b, if $ab = 0$, then $a = 0$, $b = 0$, or both a and b equal zero.

$(3a) \cdot (2a-1) = 0$

$\frac{3a}{3} = \frac{0}{3}$

$a = 0$

$2a - 1 = 0$

$+1 \quad +1$

$\frac{2a}{2} = \frac{1}{2}$

$a = \frac{1}{2}$

GuidedPractice

4A. $3n(n + 2) = 0$

$\frac{3n}{3} = \frac{0}{3}$

$n = 0$

$n + 2 = 0$

$-2 \quad -2$

$n = -2$

must=0 to factor

4B. $8b^2 - 40b = 0$

$8b(b - 5) = 0$

$\frac{8b}{8} = \frac{0}{8}$

$b = 0$

$b - 5 = 0$

$+5 \quad +5$

$b = 5$

$5x^2 + 25x = 0$

$5x(x + 5) = 0$

$\frac{5x}{5} = \frac{0}{5}$

$x = 0$

$x + 5 = 0$

$-5 \quad -5$

$x = -5$

Must =0 to factor

b. $c^2 = 3c$

$-3c \quad -3c$

$c^2 - 3c = 0$

$c(c-3) = 0$

$c = 0 \quad c - 3 = 0$

$+3 \quad +3$

$c = 3$

4C. $x^2 = -10x$

$+10x \quad +10x$

$x \times 2.5x$

$x^2 + 10x = 0$

$x(x + 10) = 0$

$x = 0 \qquad x + 10 = 0$