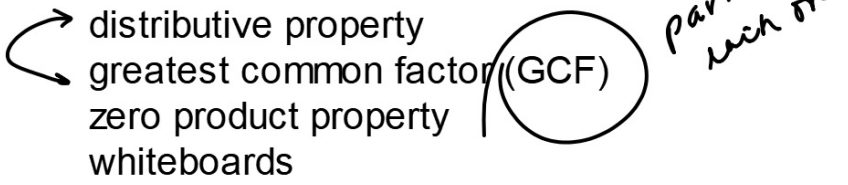
Algebra 1 8.5

Use the distributive property to factor polynomials

Solve quadratic equations by factoring

quadratic
factor
distributive property
greatest common factor (GCF)
zero product property
whiteboards



GuidedPractice

1A. $15w - 3v$

$\frac{3}{3} \cdot 5w - \frac{3}{3} v$

$3(5w - v)$

What is GCF?
What is leftover?
Backwards distributive property

b. $-4a^2b - 8ab^2 + 2ab$

$\frac{-1 \cdot 2 \cdot 2aab}{2ab} \quad \frac{-1 \cdot 2 \cdot 2 \cdot 2abb}{2ab} + \frac{2ab}{2ab}$

$2ab(-2a - 4b + 1)$

What is the GCF?

1B. $7u^2t^2 + 21ut^2 - ut$

$7ut \cdot ut + 3 \cdot 7u \cdot t \cdot t - 1 \cdot u \cdot t$

ut

$ut(7ut + 21t - 1)$

$$18a^2xy^3 + 6ax^2y^4 - 3ax^2n$$

$$\frac{2\cdot 3\cdot 3\,a\,a\,x\,y\,y\,y}{3\,a\,x} + \frac{2\cdot 3\,a\,x\,x\,y\,y\,y\,y}{3\,a\,x} - \frac{3\,a\,x\,x\,n}{3\,a\,x}$$

$$3ax\left(6ay^3 + 2xy^3 - xn\right)$$

$$25a^2c^2b + 15a^3cb^2 - 20ac^2b$$

$$\frac{5\cdot 5\cdot a\,a\,c\,c\,b}{5\,a\,c\,b} + \frac{3\cdot 5\,a\,a\,a\,c\,b\,b}{5\,a\,c\,b} - \frac{2\cdot 2\cdot 5\,a\,c\,c\,b}{5\,a\,c\,b}$$

$$5acb\left(5ac + 3a^2b - 4c\right)$$

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.

( )( ) = 0

Example 4 Solve Equations

Solve each equation. Check your solutions.

a. $(2d + 6)(3d - 15) = 0$

GuidedPractice

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

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

must be in factored form...
= 0

b. $c^2 = 3c$

$-3c \quad -3c$

$c^2 - 3c = 0$

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

$+10x \quad +10x$

$x^2 + 10x = 0$