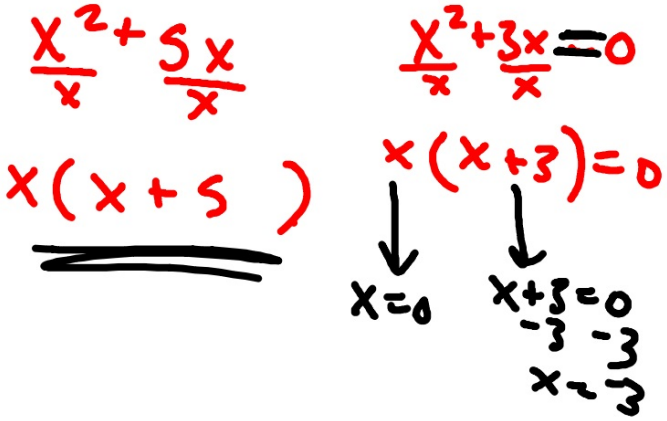
Algebra 1 8.5

Use the distributive property to factor polynomials

Solve quadratic equations by factoring

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

activ: cubes



Use the Distributive Property to factor each polynomial.

$21xy - 18x^2$

$3 \cdot 7xy - 2 \cdot 3 \cdot 3x$

$3x(7y + -6x)$

$3x \cdot 7y + 3x \cdot -6x$

$21xy + -18x^2$

$64r^3s - 32r^2s^3 + 8r^2s^2$

$8r^2s(8r - 4s^2 + s)$

GCF

all (leftovers)

Use the Distributive Property to factor each polynomial.

2222t 2225y

15. $16t - 40y$

2·3·5v 25 5x

16. $30v + 50x$

2kk 22k =

17. $2k^2 + 4k$ $2k(k+2)$

18. $\frac{5z^2}{5z} + \frac{10z}{5z}$

$5z(z+2)$

19. $4a^2b^2 + 2a^2b - 10ab^2$

$2 \cdot 2 \cdot a \cdot a \cdot b \cdot b \quad 2 \cdot a \cdot a \cdot b \quad 2 \cdot 5 \cdot a \cdot b \cdot b$

$2ab(2ab + a - 5b)$

20. $5c^2v - 15c^2v^2 + 5c^2v^3$

Example 4 p. 478

Solve each equation. Check your solutions.

39. $3b(9b - 27) = 0$

40. $2n(3n + 3) = 0$

41. $(8z + 4)(5z + 10) = 0$

42. $(7x + 3)(2x - 6) = 0$

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

$-2 \cdot 0 = 0$

$8z + 4 = 0$

$-4 \quad -4$

$\frac{8z}{8} = \frac{-4}{8}$

$z = -\frac{1}{2}$

$5z + 10 = 0$

$-10 \quad -10$

$\frac{5z}{5} = \frac{-10}{5}$

$z = -2$

$7x + 3 = 0$

$-3 \quad -3$

$\frac{7x}{7} = \frac{-3}{7}$

$2x - 6 = 0$

$+6 \quad +6$

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

$x = 3$

$$2x^2 = 4x$$
$$-4y \quad -4x$$

$\phi * x \quad \phi 2 *$

$$2x^2 - 4x = 0$$

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

$2x = 0$ $\quad$ $x - 2 = 0$

$\frac{2}{2} = \frac{2}{2}$ $\quad$ $+2 \quad +2$

$x = 0$ $\quad$ $x = 2$

$8b^2 - 40b = 0$

$8b(b - 5) = 0$

3A $c - 2cd + 8d - 4$

NP $\frac{1}{2} \cdot 2 \cdot 3 \, x$

$$\frac{2x^3}{2x} + \frac{8x^2}{2x} + \frac{12x}{2x}$$

$$2x\left(x^2 + 4x + 6\right)$$

$3p - 2p^2 - 18p + 27$

NP

$(\quad) \cdot (\quad) = 0$

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

$2d+6=0$ $\quad$ $3d-15=0$

$-6\ -6$ $\quad$ $+15\ +15$

$\frac{2d}{2}=\frac{-6}{2}$ $\quad$ $\frac{3d}{3}=\frac{15}{3}$

$d=-3$ $\quad$ $d=5$

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

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

$n=0$

$n+2=0$

$-2\ \ -2$

$n=-2$

$8b^2 - 40b = 0$

$8b(b-5) = 0$

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

$b = 0$

$b - 5 = 0$

$+5 \quad +5$

$b = 5$

$c^2 = 3c$

$-3c \quad -3c$

$\frac{c^2}{c} - \frac{3c}{c} = 0$

$c(c - 3) = 0$

$c = 0$

$c - 3 = 0$

$+3 \quad +3$

$c = 3$

$$x^2 = -10x$$

$$+10x \quad +10x$$

$$x^2 + 10x = 0$$

$$x(x+10) = 0$$

$x = 0$ or $x + 10 = 0$

$-10 \quad -10$

$x = -10$

$$x(x+3)(x+2)(x-1) = 0$$

$x = 0$ or $x + 3 = 0$ or $x + 2 = 0$ or $x - 1 = 0$

$-3 \quad -3 \qquad -2 \quad -2 \qquad +1 \quad +1$

$x = -3 \qquad x = -2 \qquad x =$