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. $5z^2 + 10z$

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

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

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

$-2 \cdot 0 = 0$

$8z + 4 = 0$

$-4 \quad -4$

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

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

$5z + 10 = 0$

$-10 \quad -10$

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

$z = -2$

$7x + 3 = 0$

$-3 \quad -3$

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

$2x - 6 = 0$

$+6 \quad +6$

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

$x = 3$

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

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

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

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

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

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

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

$8b^2 - 40b = 0$

$8b(b - 5) = 0$