

# Warm-up

Use GCF to factor

$$\textcircled{1} \quad 9x - 36$$
$$9(x - 4)$$

$$\textcircled{2} \quad 4x^3y - 12x^2y$$

GCF:  $4x^2y$

$$4x^2y(x - 3)$$

$$\textcircled{3} \quad 5x(x - 1) + 2y(x - 1)$$
$$(x - 1)(5x + 2y)$$

## 9.8b Factor by Grouping

\* When have 4 terms

$$\overbrace{x^3 + 3x^2}^{\text{GCF: } x^2} + \overbrace{+5x + 15}^{\text{GCF: } +5} \quad \leftarrow \text{Group 2 \& 2}$$

Think: Double GCF

$$\overbrace{x^2(x+3) + 5(x+3)}^{\text{GCF: } (x+3)} \quad \leftarrow \text{Another GCF!}$$

GCF: (x+3)

$$(x+3)(x^2 + 5)$$

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$$y^2 + 4y + yx + 4$$

## Homework

$$(13) x^3 + x^2 + 2x + 2 \quad (15) z^3 - 4z^2 + 3z - 12$$

$$^*(38) 2x^5y - 162x^3y \quad (43) x^3 + x^2 - 4x - 4$$

$$(45) 4y^3 - 7y^2 + 16y - 28 = 0 \quad ^*(46) 5n^3 - 30n^2 + 40n = 0$$

$$(50) c^4 - 100c^2 = 0$$

$$\textcircled{55} 25x^2 - 64$$

$$\textcircled{54} x^3 - 16x^2 + 64x$$

$$\textcircled{57} 4a^3 - 16a^2 - 9a + 36$$