

# Key

MAC1105

Factoring Review (Print)

**Factor by grouping.**

1)  $10r^2 + 25ry - 2xr - 5xy$

$$\begin{aligned} &10r^2 + 25ry - 2xr - 5xy \\ &5r(2r + 5y) - x(2r + 5y) \\ &(2r + 5y)(5r - x) \end{aligned}$$

1)  $(2r + 5y)(5r - x)$

**Factor the trinomial completely.**

2)  $x^2 - x - 72$

$$\begin{aligned} &x^2 - 9x + 8x - 72 \\ &x(x - 9) + 8(x - 9) \\ &(x - 9)(x + 8) \end{aligned}$$

2)  $(x - 9)(x + 8)$

**Factor completely. If the polynomial cannot be factored, write prime.**

3)  $x^2 + 7x - 18$

$$\begin{aligned} &x^2 + 9x - 2x - 18 \\ &x(x + 9) - 2(x + 9) \\ &(x + 9)(x - 2) \end{aligned}$$

3)  $(x + 9)(x - 2)$

**Factor by grouping.**

4)  $8z^2 - 12z + 6z - 9$

$$\begin{aligned} &8z^2 - 12z + 6z - 9 \\ &4z(2z - 3) + 3(2z - 3) \\ &(2z - 3)(4z + 3) \end{aligned}$$

4)  $(2z - 3)(4z + 3)$

**Factor the trinomial completely.**

5)  $15x^2 + 22x + 8$

$$\begin{aligned} &15x^2 + 10x + 12x + 8 \\ &5x(3x + 2) + 4(3x + 2) \\ &(5x + 4)(3x + 2) \end{aligned}$$

5)  $(5x + 4)(3x + 2)$

Factor completely.

6)  $12y^2 + 54y - 30$

$$6(2y^2 + 9y - 5)$$
$$6(2y - 1)(y + 5)$$

6)  $6(2y - 1)(y + 5)$

Factor the polynomial completely.

7)  $9x^2 - 25$

7)  $(3x + 5)(3x - 5)$

Factor the polynomial.

8)  $81x^2 + 90xy + 25y^2$

$$(9x + 5y)^2$$

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Factor the polynomial completely.

9)  $64a^3 - 27b^3$

$$(4a - 3b)(16a^2 + 12ab + 9b^2)$$

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10)  $t^3 + 216$

$$(t + 6)(t^2 - 6t + 36)$$

10)  $(t + 6)(t^2 - 6t + 36)$