

# Factoring Review Worksheet

Name: KEY

Factor each expression. Pay attention if the expression is a monomial, binomial, or trinomial!

1.)  $4x^2$

$$\boxed{2 \cdot 2 \cdot x \cdot x}$$

2.)  $x^2 - 11x + 24$

$$\boxed{(x-8)(x-3)}$$

3.)  $20x^2 - 12x$

$$\boxed{4x(5x-3)}$$

4.)  $x^2 - 36$

$$\boxed{(x+6)(x-6)}$$

5.)  $6x^3y^2$

$$\boxed{3 \cdot 2 \cdot x \cdot x \cdot x \cdot y \cdot y}$$

6.)  $2x^2 + 4x$

$$\boxed{2x(x+2)}$$

7.)  $3x^2 + 13x + 4$

$$\begin{array}{l} 3x^2 + 12x \quad | \quad 1x + 4 \quad \begin{array}{l} 12 \\ \wedge \\ 1 \end{array} \\ 3x(x+4) + 1(x+4) \\ \boxed{(x+4)(3x+1)} \end{array}$$

8.)  $2x^2 + 2x$

$$\boxed{2x(x+1)}$$

9.)  $3x - 12$

$$\boxed{3(x-4)}$$

10.)  $48x^5y^3$

$$\begin{array}{l} 48 \\ \wedge \quad \wedge \\ 6 \quad 8 \\ \wedge \quad \wedge \\ 3 \quad 2 \quad 4 \quad 2 \\ \wedge \quad \wedge \\ 2 \quad 2 \end{array}$$

$$\boxed{3 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot x \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y}$$

11.)  $6x^2 - 19x - 7$   $\begin{array}{l} 6 \cdot -7 = -42 \\ -19 = 2 + -21 \end{array}$

$$\begin{array}{l} 6x^2 + 2x \quad | \quad -21x - 7 \\ 2x(3x+1) - 7(3x+1) \\ \boxed{(3x+1)(2x-7)} \end{array}$$

12.)  $x^3 - 64$

$$\boxed{(x-3)(x^2+3x+9)}$$

13.)  $2x^2 - 32$

$$\begin{array}{l} 2(x^2 - 16) \\ \boxed{2(x+4)(x-4)} \end{array}$$

14.)  $x^3 + 3x^2$

$$\boxed{x^2(x+3)}$$

15.)  $3x^2 + 13x - 10$   $\begin{array}{l} 3 \cdot -10 = -30 \\ 13 = 15 + -2 \end{array}$

$$\begin{array}{l} 3x^2 + 15x \quad | \quad -2x - 10 \\ 3x(x+5) - 2(x+5) \\ \boxed{(x+5)(3x-2)} \end{array}$$