

Name: _____

Factoring
Mixed Review

Factoring Completely – The process of factoring multiple times until a number or expression cannot be further factored.

Review:

Step 1: First look for a GCF and write “left overs” in brackets

Step 2: Look at leftovers inside the brackets and check for:

- Trinomial 1 $(x \pm a)(x \pm b)$
- Trinomial 2 $(cx \pm a)(dx \pm b)$
- Difference of Squares $(x + a)(x - a)$

Directions: Factor each of the following expressions completely.

1) $4x + 8y$ $4(x + 2y)$	2) $3x^2 - 48$ $3(x^2 - 16)$ $3(x + 4)(x - 4)$	3) $2x^3 - 50x$ $2x(x^2 - 25)$ $2x(x - 5)(x + 5)$
4) $3x^2 - 16x + 20$ $3x^2 - 10x - 6x + 20$ $x(3x - 10) - 2(3x - 10)$ $(3x - 10)(x - 2)$	5) $3x^2 - 18x + 24$ $3(x^2 - 6x + 8)$ $3(x - 2)(x - 4)$	6) $x^4 - 81$ $(x^2 - 9)(x^2 + 9)$
7) $x^2 + 5x + 6$ $(x + 2)(x + 3)$	8) $y^5 + 4y^4 + 3y^3$ $y^3(y^2 + 4y + 3)$ $y^3(y + 3)(y + 1)$	9) $3x - 75$ $3(x - 25)$
10) $7m^6 - 7m^2$ $7m^2(m^4 - 1)$ $7m^2(m^2 - 1)(m^2 + 1)$	11) $y^2 - \frac{9}{25}$ $(y - \frac{3}{5})(y + \frac{3}{5})$	12) $x^3 + 11x^2 + 24x$ $x(x^2 + 11x + 24)$ $x(x + 3)(x + 8)$
13) $2x^2 - 3x - 5$ $2x^2 - 5x + 2x - 5$ $x(2x - 5) - 1(2x - 5)$ $(2x - 5)(x + 1)$	14) $2x^3 - 2x^2 - 12x$ $2x(x^2 - x - 6)$ $2x(x - 3)(x + 2)$	15) $y^2 - 3y - 18$ $(y - 6)(y + 3)$