

**Factoring Practice**

Name \_\_\_\_\_ Date \_\_\_\_\_

Factor completely.

$$1.) y^2 - 12y + 36$$

$$(y - 6)(y - 6) \text{ or } (y - 6)^2$$

$$3.) 6x^2 + 12x + 6$$

$$= 6(x^2 + 2x + 1)$$

$$= 6(x + 1)(x + 1)$$

$$5.) 4x^2 - 8x - 5$$

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

$$7.) w^2 + 10w + 25$$

$$= (w + 5)^2$$

$$9.) 2x^2 + 9x + 10$$

$$(x + 2)(2x + 5)$$

$$11.) 5x^2 - 13x - 6$$

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

$$13.) -3x^2 + 12x$$

$$-3x(x - 4)$$

$$\text{or } 3x(-x + 4)$$

$$15.) x^2 + 10x + 24$$

$$(x + 6)(x + 4)$$

$$17.) x^2 - 81$$

$$(x - 9)(x + 9)$$

$$19.) y^2 - 144$$

$$(y - 12)(y + 12)$$

$$2.) x^2 - 8x - 48$$

$$(x + 4)(x - 12)$$

$$4.) -11y + 18 + y^2$$

$$y^2 - 11y + 18$$

$$(y - 9)(y - 2)$$

$$6.) y^2 + 14y - 32$$

$$(y + 16)(y - 2)$$

$$8.) 6x^2 + 5x - 6$$

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

$$10.) 4x^2 - 19x - 5$$

$$(x - 5)(4x + 1)$$

$$12.) \text{~~2x^3 - 32x + 120x~~ } 2x^3 - 32x + 120x$$

$$= 2x(x^2 - 16x + 60)$$

$$= 2x(x - 10)(x - 6)$$

$$14.) 5x^2 + 30x + 40$$

$$= 5(x^2 + 6x + 8)$$

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

$$16.) y^2 - 2y - 63$$

$$(y - 9)(y + 7)$$

$$18.) 17x + 70 + x^2 \rightarrow x^2 + 17x + 70$$

$$(x + 10)(x + 7)$$

$$20.) 9x^2 - 49$$

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