

## 2.5 Factoring Quiz Review

Name \_\_\_\_\_

Factor completely. If the polynomial is not factorable, write *prime*.

1.  $18x^3 + 3x^2 - 3x$

$$3x \left( \frac{6x^2}{3x} + \frac{x}{-24} - 1 \right) \begin{matrix} 6 \\ \wedge \\ 3-2 \end{matrix}$$

$$(2x+1)(3x-1)$$

2.  $8x^3 + 125$

$$(2x+5)(4x^2 - 10x + 25)$$

3.  $x^2 + 14x - 45$

Prime

4.  $x^2 + 16x + 64$

$$(x+8)^2$$

5.  $9x^2 - 30x + 16$

$$\frac{9x^2}{-6x} \quad \frac{9x^2}{-24x} \quad \begin{matrix} 144 \\ \wedge \\ -6-24 \end{matrix}$$

$$(3x-2)(3x-8)$$

6.  $2y^5 + 5y^3 - 16y^2 - 40$

$$y^3(2y^2+5) - 8(2y^2+5)$$

$$(y^3-8)(2y^2+5)$$

$$(y-2)(y^2+2y+4)(2y^2+5)$$

7.  $-y^2 + y + 42$

$$-1(y^2 - y - 42)$$

$$-1(y+6)(y-7)$$

8.  $4x^2 - 16$

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

$$4(x+2)(x-2)$$

9.  $3x^{2/3} + 22x^{1/3} + 35$

$$\frac{3x^{2/3}}{7x^{1/3}} + \frac{3x^{1/3}}{15x^{1/3}} \quad \begin{matrix} 105 \\ \wedge \\ 7 \quad 15 \end{matrix}$$

$$(3x^{1/3} + 7)(x^{1/3} + 5)$$

10.  $-y^2 + 64$

$$-1(y^2 - 64)$$

$$-1(y+8)(y-8)$$

11.  $2a^2 + 40a + 102$

$$2(a^2 + 20a + 51)$$

$$2(a+3)(a+17)$$

12.  $y^3 - 1$

$$(y-1)(y^2 + y + 1)$$

13.  $-6x^2 - 18 - 42x$

$$-6x^2 - 42x - 18$$

$$-6(x^2 + 7x + 3)$$

14.  $x^4 - 15x^2 - 16$

$$(x^2 - 16)(x^2 + 1)$$

$$(x+4)(x-4)(x^2 + 1)$$

15.  $25x^2 + 36$

Prime

16.  $c^2 + 10c - 39$

$$(c+13)(c-3)$$

17.  $x^2y - 22xy^2 + 121y^3$

$$y(x^2 - 22xy + 121y^2)$$

$$y(x - 11y)^2$$

18.  $4x^3 + 2x^2 - 2x - 1$

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

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

19.  $-2x^2 - 5x + 63$

$$-1(2x^2 + 5x - 63)$$

20.  $x^2 - 100$

$$(x+10)(x-10)$$

21.  $n^2 - 24n + 63$

$$(n-3)(n-21)$$