

Algebra 2
Worksheet P3 A

NAME KEY

Factor. If not possible, write *prime*.

1. $x^2 + 7x + 12$

$$(x+3)(x+4)$$

2. $3x^2 - 9x - 2x + 6$

$$3x(x-3) - 2(x-3) \\ (3x-2)(x-3)$$

3. $6x^2 - 4x - 4$

$$2(3x^2 - 2x - 2)$$

4. $4x^2 - 25$

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

5. $x^2 - 12x + 36$

$$(x-6)(x-6) \\ (x-6)^2$$

6. $2x^2 + 7x - 15$

$$\begin{array}{r} \overline{2x^2} \quad \overline{2x^2} \quad \begin{array}{c} 30 \\ \wedge \\ +10-3 \end{array} \\ 10x \quad -3x \\ (x+5)(2x-3) \end{array}$$

7. $x^2 + 5x - 24$

$$(x+8)(x-3)$$

8. $x^2 + 3x + 10$

Prime

9. $x^3 + 125$

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

10. $2ay + 8by + 3ax + 12bx$

$$2y(a+4b) + 3x(a+4b) \\ (2y+3x)(a+4b)$$

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

$$\begin{array}{r} \frac{6x^2}{2x} \quad \frac{6x^2}{-15x} \end{array} \quad \begin{array}{r} 30 \\ \wedge \\ 2 \quad -15 \end{array}$$

$$(3x+1)(2x-5)$$

$$12. 2x^3 - 128$$

$$2(x^3 - 64)$$

$$2(x-4)(x^2+4x+16)$$

$$13. 3x^2 - 6x - 24$$

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

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

$$14. 9x^2 + 30x + 25$$

$$\begin{array}{r} \frac{9x^2}{15x} \quad \frac{9x^2}{15x} \end{array} \quad (3x+5)(3x+5)$$

$$\begin{array}{r} 225 \\ \wedge \\ 15 \quad 15 \end{array}$$

$$15. x^4 - 1$$

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

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

$$16. x^2 - 9x - 20$$

Prime

$$17. 4x^2 + 11x - 3$$

$$\begin{array}{r} \frac{4x^2}{12x} \quad \frac{4x^2}{-x} \end{array} \quad \begin{array}{r} 12 \\ \wedge \\ 12 \quad -1 \end{array}$$

$$(x+3)(4x-1)$$

$$18. x^2 - 7x - 18$$

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

$$19. 4x^2 - 12x + 9$$

$$\begin{array}{r} \frac{4x^2}{-6x} \quad \frac{4x^2}{-6x} \end{array} \quad \begin{array}{r} 36 \\ \wedge \\ -6 \quad -6 \end{array}$$

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

$$(2x-3)^2$$

$$20. 4x^3 - 6x^2 - 40x$$

$$2x(2x^2 - 3x - 20)$$

$$\begin{array}{r} \frac{2x^2}{-8x} \quad \frac{2x^2}{5x} \end{array} \quad \begin{array}{r} 40 \\ \wedge \\ -8 \quad 5 \end{array}$$

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