

Algebra 2
Worksheet P3 B

NAME KEY

Factor. If not possible, write *prime*.

1. $x^2 - 10x + 25$

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

2. $3x^2 - 14x + 8$

$$\begin{array}{r} \overbrace{3x^2 - 14x + 8} \\ \underline{3x^2 - 2x} \quad \underline{3x^2 - 12x} \\ -2x - 12x \end{array}$$
$$(3x-2)(x-4)$$

3. $x^2 - 2x - 15$

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

4. $5x^2 - 10x - 15$

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

5. $x^2 - 49$

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

6. $x^2 + 10x - 24$

$$(x+12)(x-2)$$

7. $x^2 + x - 20$

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

8. $x^2 + 13x + 36$

$$(x+4)(x+9)$$

9. $x^3 + 64$

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

10. $3ab + 9bc + 4ad + 12cd$

$$3b(a+3c) + 4d(a+3c)$$
$$(3b+4d)(a+3c)$$

$$11. 6x^2 - 7x - 20$$

$$\frac{6x^2}{8x} \quad \frac{6x^2}{-15x} \quad \begin{array}{c} 120 \\ \wedge \\ +8 \quad -15 \end{array}$$

$$(3x+4)(2x-5)$$

$$12. 2x^2 - 72$$

$$2(x^2 - 36)$$

$$2(x+6)(x-6)$$

$$13. 3x^2 - 12x - 24$$

$$3(x^2 - 4x - 8)$$

$$14. 4x^2 + 28x + 49$$

$$\frac{4x^2}{14x} \quad \frac{4x^2}{14x} \quad \begin{array}{c} 196 \\ \wedge \\ 14 \quad 14 \end{array}$$

$$(2x+7)(2x+7)$$

$$(2x+7)^2$$

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

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

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

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

$$16. x^2 - 13x - 48$$

$$(x-16)(x+3)$$

$$17. 4x^2 + 4x - 15$$

$$\frac{4x^2}{10x} \quad \frac{4x^2}{-6x} \quad \begin{array}{c} 60 \\ \wedge \\ +10 \quad -6 \end{array}$$

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

$$18. x^2 - 14x - 24$$

Prime

$$19. x^2 - 16x + 64$$

$$(x-8)(x-8)$$

$$(x-8)^2$$

$$20. 4x^3 + 5x^2 - 10x$$

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

$$\frac{4x^2}{4x^2} \quad \frac{4x^2}{-10x} \quad \begin{array}{c} 40 \\ \wedge \\ + \quad - \end{array}$$