

Name: key!

Hour: _____

Factoring Review

Factor Completely.

1. $6x^2 + x - 15$

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

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

$$(x-6)^2$$

3. $2x^2 - 18$

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

4. $12x^2 + 28x + 15$

$$(2x+3)(6x+5)$$

5. $28x^2 - 65x + 28$

$$(7x-4)(4x-7)$$

6. $42x^2 - xy - 30y^2$

$$(7x-by)(6x+5y)$$

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

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

8. $x^2 - y^2$

$$(x+y)(x-y)$$

9. $21x^3 - 35xy^2$

$$7x(3x^2 - 5y^2)$$

10. $6ax^2 + 11ax - 10a$

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

11. $45 + 2x^2$

$$\text{prime}$$

12. $6x^2 - 10x - 4$

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

25. $15 + 78x - 72x^2$

$$-3(6x+1)(4x-5)$$

23. $x^4 + 5x^2 + 6$

$$(x^2+2)(x^2+3)$$

21. $x^4 - 7x^3 - 18x^2$

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

19. $102 - 23x + x^2$

$$(x-6)(x-17)$$

17. $10x^2 + 105xy + 270y^2$

$$5(2x+9y)(x+6y)$$

15. $15x^2 - 16xy + 4y^2$

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

13. $18x^2 + 9x + 1$

$$(3x+1)(6x+1)$$

26. $36x^3y + xy^3 - 12x^2y^2$

$$xy(6x-y)(6x-y) = [xy(6x-y)^2]$$

24. $7x^2 - 112x$

$$7x(x-16)$$

22. $2x^3 - 12x^2y + 18xy^2$

$$2x(x-3y)(x-3y) = [2x(x-3y)^2]$$

20. $6x^2 + 2x + 6xy + 2y$

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

18. $3x^3 - x^2 - 12x + 4$

$$(3x-1)(x^2-4) = [(3x-1)(x+2)(x-2)]$$

16. $4x^3 + 12x^2 - x - 3$

$$(x+3)(4x^2-1) = [(x+3)(2x+1)(2x-1)]$$

14. $3x^2 - 12$

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

Factor Completely. Check by using the distributive property.

$$1. 6x^2 + x - 15$$

$$6x^2 - 9x + 10x - 15$$

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

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

$$4. 12x^2 + 28x + 15$$

$$12x^2 + 10x + 18x + 15$$

$$2x(6x+5) + 3(6x+5)$$

$$(2x+3)(6x+5)$$

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

$$15x^2 - 6x + 5x - 2$$

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

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

$$10. 6ax^2 + 11ax - 10a$$

$$A(6x^2 + 11x - 10)$$

$$A(6x^2 + 15x - 4x - 10)$$

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

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

$$13. 18x^2 + 9x + 1$$

$$(3x+1)(6x+1)$$

$$16. 4x^3 + 12x^2 - x - 3$$

$$4x^2(x+3) - 1(x+3)$$

$$(4x^2-1)(x+3)$$

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

$$19. 102 - 23x + x^2$$

$$(x-6)(x-17)$$

$$22. 2x^3 - 12x^2y + 18xy^2$$

$$2x(x^2 - 6xy + 9y^2)$$

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

$$25. 15 + 78x - 72x^2$$

$$-3(5 + 26x - 24x^2)$$

$$-3(24x^2 - 30x + 4x + 5)$$

$$-3(6x(4x-5) + 1(4x-5))$$

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

$$(x-6)(x-6)$$

$$(x-6)^2$$

$$5. 28x^2 - 65x + 28$$

$$28x^2 - 49x - 16x + 28$$

$$7x(4x-7) - 4(4x-7)$$

$$(7x-4)(4x-7)$$

$$8. x^2 - y^2$$

$$(x+y)(x-y)$$

$$11. 45 + 2x^2$$

$$\text{Prime}$$

$$14. 3x^2 - 12$$

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

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

$$17. 10x^2 + 105xy + 270y^2$$

$$10x^2 + 60xy + 90xy + 270y^2$$

$$10x(x+6y) + 15y(x+6y)$$

$$5(x+6y)(2x+6y)$$

$$20. 6x^2 + 2x + 6xy + 2y$$

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

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

$$23. x^4 + 5x^2 + 6$$

$$(x^2+2)(x^2+3)$$

$$26. 36x^2y + xy^3 - 12x^2y^2$$

$$xy(36x^2 + y^2 - 12xy)$$

$$xy(36x^2 - 12xy + y^2)$$

$$xy(6x-y)^2$$

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

$$2(x^2 - 9)$$

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

$$6. 42x^2 - xy - 30y^2$$

$$42x^2 + 35xy - 36xy - 30y^2$$

$$7x(6x+5y) - 6y(6x+5y)$$

$$(7x-6y)(6x+5y)$$

$$9. 21x^3 - 35xy^2$$

$$7x(3x^2 - 5y^2)$$

$$12. 6x^2 - 10x - 4$$

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

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

$$15. 15x^2 - 16xy + 4y^2$$

$$15x^2 - 6xy - 10xy + 4y^2$$

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

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

$$18. 3x^3 - x^2 - 12x + 4$$

$$x^2(3x-1) - 4(3x-1)$$

$$(x^2-4)(3x-1)$$

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

$$21. x^4 - 7x^3 - 18x^2$$

$$x^2(x^2 - 7x - 18)$$

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

$$24. 7x^2 - 112x$$

$$7x(x-16)$$

