

## Review: Unit 12

Give BOTH names for the polynomial.

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

Quadratic trinomial

2. 37

constant  
mono.

3.  $8z^3$

mono.  
Cubic

4.  $2a + 3$

binomial  
linear

5. What is the constant term in #1?

3

6. What is the coefficient of #3?

8

↑  
The number  
in front of  
the variable

Simplify each polynomial. Write your answer in standard form.

$$7. \begin{array}{r} (6x^3 + 4x^2 - 17) \\ + 3x - 2x^3 \quad \swarrow \quad -8 \\ \hline 4x^3 + 4x^2 + 3x - 25 \end{array} - (2x^3 - 3x + 8)$$

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

8.  $(3x^2 + 7x - 4) + (4x^3 - 5x - 8)$

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

9.  $3x^3(2x^3 - 4x^2 + 5x)$

$$6x^6 - 12x^5 + 15x^4$$

10.  $(3x - 5)(6x + 3)$

$$18x^2 + 9x - 30x - 15$$

$$18x^2 - 21x - 15$$

~~11.  $(x - 3)(2x^2 - 6x + 7)$~~

12.  $(2x - 5)^2$        $(2x - 5)(2x - 5)$

$$\begin{array}{r} 4x^2 - 10x - 10x + 25 \\ \hline \text{F} \quad \text{O} \quad \text{I} \quad \text{L} \\ 4x^2 - 20x + 25 \end{array}$$

13.  $(3x - 5)(3x + 5)$

$$\begin{array}{r} 9x^2 + 15x - 15x - 25 \\ \hline \text{F} \quad \text{O} \quad \text{I} \quad \text{L} \\ \text{cancels} \\ 9x^2 - 25 \end{array}$$

14.  $(7x + 10)(x - 3)$

$$\begin{array}{r} 7x^2 - 21x + 10x - 30 \\ \hline \text{F} \quad \text{O} \quad \text{I} \quad \text{L} \\ 7x^2 - 11x - 30 \end{array}$$

## Factoring Summary

Always look for a Greatest Common Factor FIRST!!!

Factor.

$$15. 15x^3y^2 - 27x^4y^3 + 36x^2y^5$$

$$3x^2y^2(5x - 9x^2y + 12y^3)$$

$$17. x^2 - 16x + 15$$

$$(x-1)(x-15)$$

$$19. w^2 + 7w - 18$$

$$(w+9)(w-2)$$

$$16. (8x^4 + 6x) - 28x^3 - 21$$

$$2x(4x^3 + 3) - 7(4x^3 + 3)$$

$$(2x-7)(4x^3+3)$$

$$18. x^2 - 3x - 28$$

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

$$20. 5x^2 - 11x + 2$$

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

$$22. 3x^2 + 17x + 10$$

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

$$23. 25y^2 - 1$$

$$(5y+1)(5y-1)$$

$$24. 9x^2 - 16$$

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

$$25. 4x^2 - 81$$

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

$$26. 36a^2 \oplus 49$$

Prime

$$\begin{array}{r} -30 \\ 10 \cdot -3 \end{array} \quad 21. 6x^2 + 7x - 5 \quad \frac{(6x+10)(6x-3)}{6}$$