

Name: _____

Key

Date: _____

Combining Functions Practice

Given the functions $f(x) = 3x^2 + 5x - 8$ and $g(x) = 2x^2 + 4x - 9$

1. Find $f(x) + g(x)$

$$5x^2 + 9x - 17$$

2. Find $g(x) - f(x)$

$$-x^2 - x - 1$$

3. Find $f(2) + g(2)$

$$14 + 7 = 21$$

4. Find $2f(x) - g(x)$

$$4x^2 + 6x - 7$$

Given the functions $f(x) = 2x^2 + 3x - 5$ and $g(x) = x^2 + 5x$ and $h(x) = 3x^2$

5. Find $h(x) \cdot g(x)$

$$3x^4 + 15x^3$$

6. Find $2g(x) \cdot f(x)$

$$4x^4 + 26x^3 + 20x^2 - 50x$$

7. Find $h(x) + g(x) - f(x)$

$$2x^2 + 2x + 5$$

8. Find $3f(x) - g(x)$

$$5x^2 + 4x - 15$$

9. Find $-4h(x) + g(x)$

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

10. Find $-2f(x) - 5g(x) + 7h(x)$

$$12x^2 - 31x + 10$$

Given $f(x) = 5x^2 - 9x + 2$ $g(x) = x^2 + 3x - 8$ $h(x) = -2x^2 + 1$ and $k(x) = 4x - 3$

1. Find $4f(x) + 3g(x)$

$$23x^2 - 27x - 16$$

2. Find $h(x) - f(x)$

$$-7x^2 + 9x - 1$$

3. Find $h(x) \cdot k(x)$

$$-8x^3 + 6x^2 + 4x - 3$$

4. Find $h(3) + g(-4)$

$$-17 + -4 = -21$$

5. Find $5f(x) + 7g(x)$

$$32x^2 - 24x - 46$$

6. Find $f(x) \cdot 2k(x)$

$$40x^3 - 102x^2 + 70x - 12$$

Don't Forget:

7. $g(x) = 2x^2 - 4 - 3x^4 + 12x^3$

standard form: $-3x^4 + 12x^3 + 2x^2 - 4$

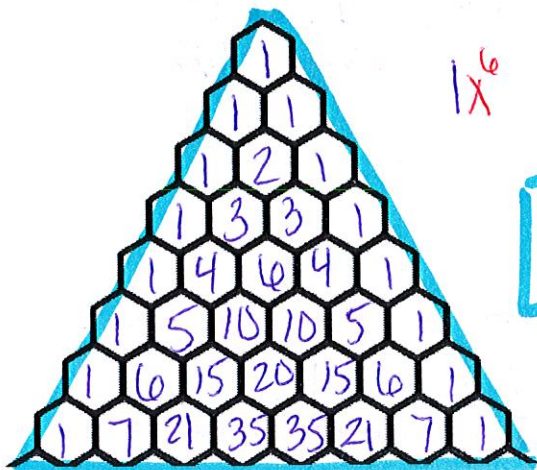
degree: 4

leading coefficient: -3

constant: -4

Classify (2 names): Quartic, polynomial

8. Fill in Pascal's Triangle



9. $(x+2)^6$

$$1x^6 \quad 6x^5(2) \quad 15x^4(2)^2 \quad 20x^3(2)^3 \quad 15x^2(2)^4 \quad 6x(2)^5 \quad 1(2)^6$$

$$x^6 + 12x^5 + 60x^4 + 120x^3 + 120x^2 + 192x + 64$$