

1. Write the slope-equation of the line that has a slope of $-\frac{4}{3}$ and passes through the point $(-6, -5)$.

$$y = -\frac{4}{3}x - 13$$

Perform the indicated operation and then answer the questions to the right.

2. $(3x + 8)^2$

$$9x^2 + 48x + 64$$

Circle one of the following:

Monomial

Binomial

Trinomial

Polynomial

Degree: 2

Leading Coefficient: positive

3. $(-6x - 3 + 19x^2 + x^3) + (-12 - 5x^3)$

$$-4x^3 + 19x^2 - 6x - 15$$

Circle one of the following:

Monomial

Binomial

Trinomial

Polynomial

Degree: 3

Leading Coefficient: negative

4. $(-x^2 - 8x + 7x^4) - (14x^3 - 9x - 10 + 12x^2)$

$$7x^4 - 14x^3 - 13x^2 + x + 10$$

Circle one of the following:

Monomial

Binomial

Trinomial

Polynomial

Degree: 4

Leading Coefficient: positive

Perform the indicated operation.

5. $(7 - 6i) + (8 - 3i)$

$$15 - 9i$$

6. $(-3 + 2i) - (-6 + 8i)$

$$3 - 6i$$

7. $(4 - 5i)(10 + 9i)$

$$85 - 14i$$

8. $(3 - 7i)^2$

$$-40 - 42i$$

9. Solve using the Quadratic Formula: $f(x) = x^2 + 2x - 35$, verify by using a graphing calculator.

$$x = 5, x = -7$$

10. Given $f(x) = 2(x + 3)^2 - 1$

a. Find the vertex: $(-3, -1)$

b. Find the y-intercept: $(0, 17)$

c. Find the x-intercepts: $(-2.29, 0)$
 $(-3.71, 0)$

11. Given $f(x) = (4x - 3)(x - 6)$

a. Find the vertex: $(3.38, -27.56)$

b. Find the y-intercept: $(0, 18)$

c. Find the x-intercepts: $(\frac{3}{4}, 0)$
 $(6, 0)$

BONUS: Miss Boehl has an 11" x 14" photo from her senior prom that she'd like to take off her fridge and frame. If the area of the framed image is 4" less than twice the photo's area, what is the thickness of the frame?



$$x = 2.5 \text{ inches}$$