

Write the polynomial in standard form. Identify the degree and leading coefficient of the polynomial. Then classify the polynomial by the number of terms.

1. $5 + x^2 - 7x \xrightarrow{\text{Rewrite}} x^2 - 7x + 5$	2. $3x + 5x^2 - 7x + 5 \xrightarrow{\text{Rewrite}} 5x^2 - 7x + 5$
Degree: 2 Leading Coeff. 1	Degree: 2 Leading Coeff. 5
Classify: <i>Trinomial</i>	Classify: <i>Trinomial</i>

Find the sum or difference.

3. $(-2p + 4) - (p^2 - 6p + 8)$

$$\begin{aligned} & -2p + 4 - p^2 + 6p - 8 \\ & \boxed{-p^2 + 4p - 4} \end{aligned}$$

4. $(4x^4 + 2xy + y) + (2x^4 - 2xy - 4y)$

$$\boxed{6x^4 - 3y}$$

Find the product.

5. $(h - 5)(h - 8)$

$$\boxed{h^2 - 13h + 40}$$

6. $(2w - 3)(3w + 5)$

$$\begin{aligned} & 6w^2 - 9w + 10w - 15 \\ & \boxed{6w^2 + w - 15} \end{aligned}$$

7. $(3x + 5y)^2$

$$\begin{aligned} & (3x + 5y)(3x + 5y) \\ & \boxed{9x^2 + 30xy + 25y^2} \end{aligned}$$

8. $(x - 7)(x + 7)$

$$\boxed{x^2 - 49}$$

Solve the polynomial equation.

9. $x^2 + 7x = 0$

$$\begin{aligned} & x(x + 7) = 0 \\ & \boxed{x = 0 \quad x = -7} \end{aligned}$$

10. $2x(2x - 4)(x - 2) = 0$

$$\begin{aligned} & 2x = 0 \quad 2x - 4 = 0 \quad x - 2 = 0 \\ & \quad \quad 2x = 4 \quad \quad \quad x = 2 \\ & \boxed{x = 0 \quad x = 2} \end{aligned}$$

Factor.

11. $x^2 - 15x + 50$

$$\boxed{(x - 10)(x - 5)}$$

12. $2n^2 - 18n + 36$

$$\begin{aligned} & 2x - 12 \quad \boxed{(2n - 12)(n - 3)} \\ & 1x - 3 \end{aligned}$$

13. $3x^2 - 14x + 8$

$$3x - 2$$

$$1x - 4$$

$$\boxed{(3x - 2)(x - 4)}$$

14. $-5x^2 + 6x - 1$

$$-(5x^2 - 6x + 1)$$

$$5x - 1$$

$$1x - 1$$

$$\boxed{-(5x - 1)(x - 1)}$$

Factor and Solve.

15. $x^2 - 9 = 0$

$x - 3 = 0$ $x + 3 = 0$

$x = 3$ $x = -3$

16. $x^2 + 6x + 8 = 0$

$(x + 4)(x + 2) = 0$

$x = -2$ $x = -4$

Application

17. A farmer plants a rectangular pumpkin patch in the corner of a square plot of land. The area of the pumpkin patch is 600 square meters.

What is the area of the square plot of land?

$(s - 40)(s - 30) = 600$

$s^2 - 70s + 1200 = 600$

$s^2 - 70s + 600 = 0$

$(s - 60)(s - 10) = 0$

$s = 60$ $s = 10$

3600 m^2

