

**Do you know HOW?**

Find the degree of each monomial.

- $-5a^8$
- $4x^2y^3$

Write each polynomial in standard form. Then name each polynomial based on its degree and number of terms.

- $4x + 3x^2$
- $7p^2 - 3p + 2p^3$

Simplify each sum or difference.

- $(x^2 + 6x + 11) + (3x^2 + 7x + 4)$
- $(5w^3 + 3w^2 + 8w + 2) + (7w^2 + 3w + 1)$
- $(4q^2 + 10q + 7) - (2q^2 + 7q + 5)$
- $(9t^4 + 5t + 8) - (3t^2 - 6t - 4)$

Simplify each product.

- $6x^2(4x^2 + 3)$
- $-8c^3(3c^2 + 2c - 9)$

Factor each polynomial.

- $16b^4 + 8b^2 + 20b$
- $77x^3 + 22x^2 - 33x - 88$

Simplify each product.

- $(x + 2)(x + 9)$
- $(4b - 1)(b - 8)$
- $(h + 2)(3h^2 + h - 7)$
- $(z - 1)(z^2 - 4z + 9)$

- Design** You are designing a rectangular rubber stamp. The length of the stamp is $2r + 3$. The width of the stamp is $r - 4$. What polynomial in standard form represents the area of the stamp?

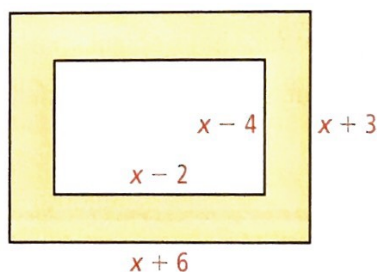
Simplify each product.

- $(r + 3)^2$
- $(k - 3)(k + 3)$
- $(3d + 10)^2$
- $(g + 10)(g - 10)$
- $(2m - 7)^2$
- $(7h - 2)(7h + 2)$

- Woodworking** A birdhouse has a square base with side length $3x - 4$. What polynomial in standard form represents the area of the base?

Do you UNDERSTAND?

- Writing** Can the degree of a monomial ever be negative? Explain.
- Geometry** The figures below are rectangles. What polynomial in standard form represents the area of the shaded region?



- Open-Ended** Write a trinomial that has $9x^2$ as the GCF of its terms.
- Open-Ended** Write a trinomial of degree 4 such that the GCF of its terms is 1.
- Reasoning** Suppose n represents an even number. Write a simplified expression that represents the product of the next two even numbers.
- Writing** Describe how to simplify $(8k^2 + k - 1) - (k^3 - 4k^2 - 7k + 15)$. Write your answer as a polynomial in standard form.