

6. Write each of the following polynomial expressions in standard form.

(a) $7x^2 + 4x^3 + 5 + 2x$

(b) $4 - x - 5x^2$

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

(d) $2x + 1 - 3x^3 + 5x^2$

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

(f) $y^5 + y^{10} - y^2 + y^7$

7. Find each of the following sums and differences. Write your answer in simplest standard form.

(a) $6x^2 - 2x + 8 + 3x^2 + 7x - 2$

(b) $x^3 + 4x^2 - 8x + 3 + x^3 - x + 1$

(c) $(5x^2 + 3x - 1) - (3x^2 - 6x + 4)$

(d) $(2x^3 - 5x^2 + 8x - 1) - (-4x^3 + 8x^2 - 3x - 9)$

(e) $4x^2 + 6x - 3 - 3x^2 + 2x + 4$

(f) $(4x^2 + 6x - 3) - (3x^2 + 2x + 4)$

APPLICATIONS

8. A box has a width that is 2 inches greater than its height and a length that is 6 inches greater than its height. Its volume is given by the polynomial expression $x^3 + 8x^2 + 12x$, where x is the box's height. What is the box's volume, in cubic inches, if its height is 10 inches?

(1) 1,812

(3) 182

(2) 1,920

(4) 2,180

REASONING

9. Polynomial expressions act a lot like integers because the structure of polynomials is based on the structure of integers. Based on the statement below about integers, make a statement about polynomials.

Statement About Integers: An integer added to an integer gives an integer.

Statement About Polynomials: _____

