Lesson 4 Practice Problems

1. Here are two expressions whose product is a new expression, A.

   $(5x^4 + \square x^3)(4x^{\square} - 6) = A$

   Andre says that any real number can go in either of the boxes and A will be a polynomial. Is he correct? Explain your reasoning.

2. Lin divides the polynomial $2x^2 - 4x + 1$ by 4 and gets $0.5x^2 - x + 0.25$. Is $0.5x^2 - x + 0.25$ a polynomial? Explain your thinking.

3. What is the result when any 2 integers are multiplied?

   A. a positive integer

   B. a negative integer

   C. an integer

   D. an even number

4. Clare wants to make an open-top box by cutting out corners of a 30 inch by 25 inch piece of poster board and then folding up the sides. The volume $V(x)$ in cubic inches of the open-top box is a function of the side length x in inches of the square cutouts.

   a. Write an expression for $V(x)$.

   b. What is a reasonable domain for V in this context?

(From Unit 2, Lesson 1.)

5. Identify the degree, leading coefficient, and constant value of each of the following polynomials.

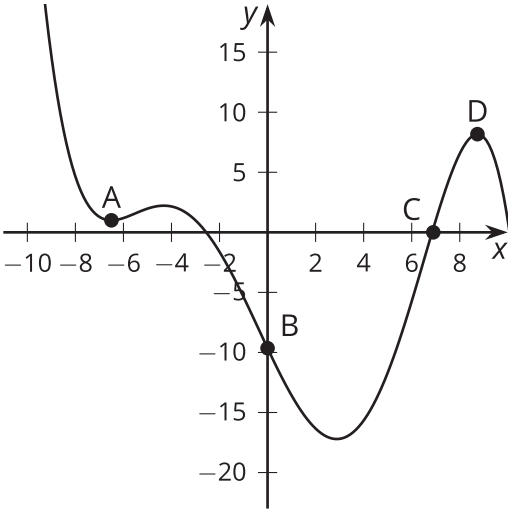
   a. $f(x) = 2x^5 - 8x^2 - x - 6$

   b. $h(x) = x^3 - 7x^2 - x + 2$

   c. $g(x) = 5x^2 - 4x^3 + 2x + 5.4$

   (From Unit 2, Lesson 3.)

6. Which point is a relative minimum?



   A. A

   B. B

   C. C

   D. D

   (From Unit 2, Lesson 3.)