**Section 1**

**Working with Expressions**

1. Consider the polynomial 5x2 – 9x3 + 2x11 + 6

The degree is\_\_\_

The leading coefficient is \_\_\_

The number of terms is \_\_\_

The constant term is \_\_\_

1. Write the expression (4x – 2) ● 6(2x + 7) in the standard form of a quadratic expression, ax2 + bx + c. What are the values of the coefficients of each term and the constant term?

a =

b =

c =

1. Which of the following statements are true? Check all that apply.

* For all real numbers a and b, a + b = b + a
* For all real numbers a and b, ab = ba
* For all real numbers a and b, a – b = b – a
* For all real numbers a and b, a/b = b/a
* For all real numbers a, b and c, (a + b) + c = a + (b + c)
* For all real numbers a, b, and c, (a – b) – c = a – (b – c)
* For all real numbers a, b and c, a(b + c) = ab + ac

1. The profit a company earns every month depends on the amount of product sold, p, for $855 each and the amount spent in rent, utilities, and other expenses, which always totals to $6, 780. The CEO of the company earns 15% of this profit. How much does the CEO earn if the company sells 250 products in a given month?
2. Mercedes is going to have her car fixed. Cairo Prince Auto Tech charges $45 for an estimate plus $24 per additional hour of work. Tarantino’s Car Garage offers a free estimate and it charges $30 per hour of work. Which of the following statements are true? Select all that apply.

* Cairo Prince’s cost can be modeled by 24h
* Tarantino’s cost can be modeled by 30h
* If the work takes 6 hours, Cairo Prince is cheaper
* If the work takes 7 hours, Tarantino’s is cheaper
* It will take 10 hours for both to cost the same

1. Mr. and Mrs. Smith’s children all play different sports. They want to buy a combination of soccer training sets, which each cost $149, volleyball training sets, which each cost $127, and football training sets which each cost $275. Which expression represents the total amount of money the Smiths will spend, before sales tax, based on the number of sports sets they buy?
2. 149 + 127 + 275
3. (149 + 127 + 275)(s + v + f)
4. 149s + 127v + 275f
5. S + v + f
6. Duval County Landscaping uses two different sized trucks to deliver mulch. The first truck can transport x cubic yards of mulch, and the second can transport y cubic yards of mulch. The first truck makes 12 trips to a job site, while the second makes 14 trips. Create an expression that represents the difference in the total number of cubic yards that the first truck delivers compared to the second.
7. Match each polynomial with its descriptive feature from the answer choices below.

2(2x3 + x2 – 3x + 4) 5th degree polynomial

-(5a2b + 8) 9th degree polynomial

14x4 – 7x2 + 3x7  Constant term -8

8a5b4 + 11ab7c – 2a5 Four terms

5x5 – 9x3 + 2x11 Equivalent to 3x7 + 14x4 – 7x2

2x3 + 8x2 – 7 11th degree polynomial

X5 – 2 Leading coefficient of 2

1. A rectangular photograph is mounted on a square piece of cardboard whose sides have length x. The border that surrounds the photo is 3 inches on each side and 4 inches on both the top and bottom.

Which of the following expressions represents the area of the photograph? Check all that apply.

* X2
* (x + 8)(x + 6)
* (x – 8)(x – 6)
* X2 + 48
* X2 – 48
* X2 + 14x + 48
* X2 – 14x + 48

1. Rewrite the expression below.

-2a(a + b – 5) + 3(-5a + 2b) + b(6a + b – 8)

The coefficient of the a2 term is

The coefficient of the ab term is

The coefficient of the b term is