BECA / Huson / Algebra 2: Polynomials Name:
24 October 2023

2.5 PreQuiz: Operations on polynomials

1. Simplify the sum of these two polynomials: $(3x^3 + 5x^2 + x + 6) + (x^3 - 2x^2 + 7x - 8)$

2. Given the two functions $f(x) = 5x^3 + 8x^2 - x$ and $g(x) = x^4 + 2x^3 + x^2 - 5$, find their difference $f(x) - g(x)$ as a polynomial in standard form.

3. Multiply the two polynomials $f(x) = 2x + 5$ and $g(x) = 2x^2 + 3x - 1$. First complete the grid and then collect terms to find the product as a polynomial in standard form.

	$2x^2$	$+3x$	-1
$2x$			
$+5$			

4. Using subscript notation, write a recursive formula for the sequence $5, 10, 20, 40, 80, 160, \ldots$

5. Using subscript notation, write a recursive formula for the sequence $11, 3, -5, -13, \ldots$

6. Without a calculator, evaluate each polynomial for the given value of x.

   (a) $f(x) = -x^3 + 12x^2 - x + 4$, $x = 1$

   $f(1) =$

   (b) $g(x) = x^4 + x^3 + x^2$, $x = -1$

   $g(-1) =$

7. Use a calculator to find the value of $h(x) = 2x^3 - 3x^2 + 5x + 2$ for $x = -3$.

   $h(-3) =$

8. A polynomial A is used to model the value of an investment account. Two deposits were made which earned interest annually.

$$A(x) = 150x^4 + 300x^2$$

   (a) The first deposit of \$150 was made four years ago. How much was the second deposit, and how long ago was it made?

   (b) Find the value of $A(x)$ for $x = 1.05$ to the *nearest cent*.

   (c) If the interest rate earned on the account is $r = 7\frac{1}{2}\%$ what value of x would be used in the formula?