Unit 2 – Polynomial Expressions

Extra Practice

Multiple Choice: Write the letter corresponding to the correct answer.

1. If the width of a rectangle is represented by **w** and the length is 2 units more than the width, express the **perimeter** of the rectangle in terms of **w**.

   a) $2w + 2$ b) $4w + 2$ c) $4w + 4$ d) $w(w + 2)$

2. What is the total number of calories in **x** peanuts and **y** potato chips if each peanut contains 6 calories and each potato chip contains 14 calories?

   a) $20xy$ b) $20(x + y)$ c) $14x + 6y$ d) $6x + 14y$

3. A kennel has **d** dogs and **c** cats. How many more cats are there than dogs?

   a) $c + d$ b) $d - c$ c) cd d) $c - d$

4. Which expression is **not** equivalent to $\frac{2}{3}(6x + 4)$?

   a) $3(\frac{4}{3}x + \frac{8}{9})$ b) $2(2x + \frac{4}{3})$ c) $4x + 4\frac{2}{3}$ d) $4x + 2\frac{2}{3}$

Perform the indicated operation. Write your answer as a simplified polynomial expression in standard form.

5. $(3a - 4b + 5c) + (2a - 5b) + (-5a - 2c)$ 6. $(2y^3 - 6y) - (2y + y^3)$

7. $(6x^3 + 7x) - (-3x^2 + 5) + (x^2 - 10x - 1)$ 8. Subtract $9x - 1$ from $4x^2 - 2x + 3$
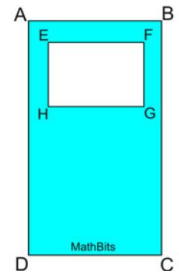
9. $(3x^2y^3)(-10xy^4)$

10. $3x^2(2x + 7)$

11. $(x - 3)(x + 5)$

12. $(y - 2)(y^2 + 3y - 5)$

Applications with Polynomials:

13. The area of a rectangle ABCD is $2x^2 + 17x + 30$ square units. The area of rectangle EFGH is $x^2 - x - 6$ square units. Express the area of the shaded region as a simplified polynomial expression written in standard form.

14. The length of a rectangular billboard is three feet less than twice its width, **w**. Express the **area** of the billboard as a simplified polynomial expression written in standard form.

15. The ages of three friends in a band are represented by three *consecutive* **even** *integers*. If the youngest band member's age is represented by **a**, express the sum of the ages of the friends as a simplified polynomial expression written in standard form.