

**Math 2 Unit 9 Worksheet 1**  
**Polynomials**

**Name:** \_\_\_\_\_  
**Date:** \_\_\_\_\_ **Per:** \_\_\_\_\_

[1-6] Write the following polynomials in standard form. Then name each polynomial based on degree and number of terms.

1.  $2x - 6x^2 - 7$

2.  $2x^5 + 9x^5$

3.  $-5 + 2x$

4.  $3x^3 - 7x^2 + 8$

5.  $4x + x^2$

6.  $-12xy^2$

[7-17] Simplify each expression.

7.  $5x + 5x$

8.  $7y - 3y$

9.  $7x^2 + 7x^2$

10.  $4x^3 - 12x^3$

11.  $(7x + 9) + (3x - 5)$

12.  $(4x - 7) - (x + 2)$

13.  $(10x + 3y) - (2x + 9y)$

14.  $(x + 7y) + (2x - 12y)$

15.  $(3x^2 + 7x - 8) + (5x^2 - 4x + 8)$

16.  $(y^3 - 4y^2 - 2) - (6y^3 + 4 - 6y^2)$

17.  $(-9r^3 + 2r - 1) - (-5r^2 + r + 8)$

[18-26] Simplify each product.

18.  $3w(w + 2)$

19.  $(z + 5)2z$

20.  $3m^2(4 + m)$

21.  $2p(p^2 - 6p + 1)$

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

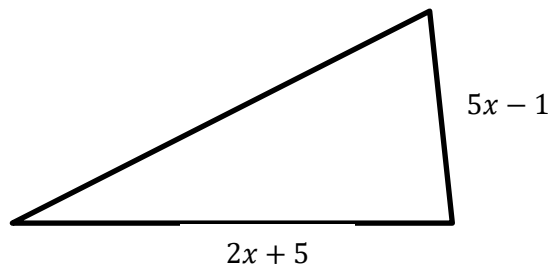
23.  $3a(-3a^2 + 2a - 7)$

24.  $6x^3(3x^2 - x + 10)$

25.  $-4h(-h^3 - 8h^2 + 2h)$

26.  $4n(n^2 + 5n + 6)$

27. The perimeter of a triangular park is  $16x + 3$ . What is the missing length?



28. The perimeter of a quadrilateral is  $39a - 7$ . Three sides have the following lengths:  $9a$ ,  $5a + 1$ , and  $17a - 6$ . What is the length of the fourth side?

29. Compare polynomial and radical expressions.

A. Polynomial Expressions

a)  $3x + 5x =$  \_\_\_\_\_

b)  $3x + 5y =$  \_\_\_\_\_

c)  $3x \cdot 5x =$  \_\_\_\_\_

d)  $3x \cdot 5y =$  \_\_\_\_\_

Radical Expressions

e)  $3\sqrt{2} + 5\sqrt{2} =$  \_\_\_\_\_

f)  $3\sqrt{7} + 5\sqrt{2} =$  \_\_\_\_\_

g)  $3\sqrt{7} \cdot 5\sqrt{7} =$  \_\_\_\_\_

h)  $3\sqrt{7} \cdot 5\sqrt{2} =$  \_\_\_\_\_

B. How are the rules for adding polynomial expressions similar to those for adding radical expressions?

C. How are the rules for multiplying polynomial expressions similar to those for multiplying radical expressions?