

11-22-17

Aim: SWBAT multiply polynomials.

HW: Packet Page 16

Do Now: Packet Page 15 # 1- 8

HOMEWORK - PERIMETER

- 1) Simplify the following expression:  $(8x-7)-(6-2x)+(4x+11)$

$$\boxed{8x-7} - \boxed{6} + \boxed{2x} + \boxed{4x} + \boxed{11}$$

$$14x - 2$$

- 2) Simplify:  $2(3ac + 4bc) - 3(5bc - 15ab) - (2ab + bc - 2ca)$

$$\boxed{6ac} + \boxed{8bc} - \boxed{15bc} + \boxed{45ab} - \boxed{2ab} - \boxed{bc} + \boxed{2ca}$$

$$43ab + 8ac - 8bc$$

- 3) Find the **sum** of  $(8a+3b)$  and  $(5a-2b-c)$

$$\boxed{8a+3b} + \boxed{5a-2b-c}$$

$$13a + b - c$$

- 4) Find the perimeter of a **rectangle** if the length is  $(x^2 - 3x + 2)$  and the width is  $(3x - 7)$

$$P = 2l + 2w$$

$$P = 2(x^2 - 3x + 2) + 2(3x - 7)$$

$$P = \boxed{2x^2} - \boxed{6x} + \boxed{4} + \boxed{6x} - \boxed{14}$$

$$P = 2x^2 - 10 \text{ units}$$

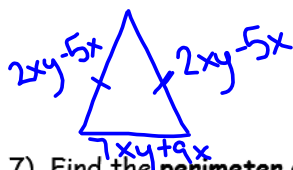
- 5) Find the perimeter of an **equilateral triangle** if each side is  $5x^3 + 3y$ .

$$P = 3s$$

$$P = 3(5x^3 + 3y)$$

$$P = 15x^3 + 9y \text{ units}$$

- 6) Find the **perimeter** of an **isosceles triangle** if the base measures  $7xy + 9x$  and each of the other sides measures  $2xy - 5x$ .



$$P = 2(2xy - 5x) + (7xy + 9x)$$

$$P = \boxed{4xy} - \boxed{10x} + \boxed{7xy} + \boxed{9x}$$

$$P = 11xy - x \text{ units}$$

- 7) Find the **perimeter** of a **square** that has a side length of  $3x^2 + 7x$ .

$$P = 4s$$

$$P = 4(3x^2 + 7x)$$

$$P = 12x^2 + 28x \text{ units}$$

- 8) **SUBTRACT**  $(3a + 4b - 2c)$  **FROM**  $(13a + b - c)$

$$* \quad \boxed{13a} + \boxed{b} - \boxed{c} - \boxed{3a} - \boxed{4b} + \boxed{2c}$$

$$10a - 3b + c$$

AIM: SWBAT multiply polynomials.

DO NOW:

Review the Laws of Exponents:

- 1) When you multiply powers of the same base, you add the exponents.
- 2) When you raise a power to another power, you multiply the exponents.
- 3) When you divide powers of the same base, you subtract the exponents.

Multiply the following monomials.

|                              |                                  |                            |                             |
|------------------------------|----------------------------------|----------------------------|-----------------------------|
| 1) $(-4x)(5x^3)$<br>$-20x^4$ | 2) $(-16x)(-3x^9)$<br>$48x^{10}$ | 3) $(-x^2)(-3x)$<br>$3x^3$ | 4) $(3x)(-2x^3)$<br>$-6x^4$ |
|------------------------------|----------------------------------|----------------------------|-----------------------------|

|                               |                            |                                       |                                   |
|-------------------------------|----------------------------|---------------------------------------|-----------------------------------|
| 5) $(-x^3)(-x^8)$<br>$x^{11}$ | 6) $(-y^2)(y^3)$<br>$-y^5$ | 7) $(3x^3y^3)(7x^2y^3)$<br>$21x^5y^6$ | 8) $(-5xy^3)(8xy)$<br>$-40x^2y^4$ |
|-------------------------------|----------------------------|---------------------------------------|-----------------------------------|

CLASSWORK: To multiply a polynomial by a monomial use the distributive property.

Simplify:

|                                |                                  |                                      |
|--------------------------------|----------------------------------|--------------------------------------|
| 9) $2x(3x + 1)$<br>$6x^2 + 2x$ | 10) $-x(x^2 - 4)$<br>$-x^3 + 4x$ | 11) $-8x(x^5 + x)$<br>$-8x^6 - 8x^2$ |
|--------------------------------|----------------------------------|--------------------------------------|

|   |                                       |  |
|---|---------------------------------------|--|
| 12) $3k^2(12 - k^5)$<br>$36k^2 - 3k^7$<br>$-3k^7 + 36k^2$ | 13) $4q^3(3q + 6)$<br>$12q^4 + 24q^3$ | 14) $-7a^2(5a^3 - 9a)$<br>$-35a^5 + 63a^3$ |
|---|---------------------------------------|--|

Simplify the following monomials.

|   |                                |  |  |                           |
|---|--------------------------------|--|--|---------------------------|
| 15) $(5x)^3$<br>$5^3 \cdot x^3$<br>$125x^3$ | 16) $(xyz)^5$<br>$x^5 y^5 z^5$ | 17) $(3rs)^2$<br>$3^2 \cdot r^2 \cdot s^2$<br>$9r^2 s^2$ | 18) $(-3xy)^3$<br>$(-3)^3 \cdot x^3 \cdot y^3$<br>$-27x^3 y^3$ | 19) $(c^2)^9$<br>$c^{18}$ |
|---|--------------------------------|--|--|---------------------------|

Complete each statement with a monomial.

|  |  |
|--|--|
| 20) $8a^6 + 64a^3 = 8a^3(a^3 + 8)$     | 21) $18x^2y - 9xy^2 = 9xy(2x - y)$               |
| 22) $12b^2 - 9b^2c^4 = 3b^2(4 - 3c^4)$ | 23) $12x^3y^6 + 20x^5y^2 = 4x^3y^2(3y^4 + 5x^2)$ |

GCF

## HOMEWORK - Multiplying Polynomials

Simplify. Write your answer in standard form.

1)  $x(x + 3)$

2)  $3x(x + 7)$

3)  $2c(c - 3d)$

4)  $x^2y(x^3 - y)$

5)  $-8mn(14m - 8n + 3)$

6)  $x^3z^2(z^2 - 5)$

7)  $xa^4(x^2a - 8c)$

8)  $4x^2y(2x^3y + 15z - 7)$

9)  $3x^3(y^2 + 2x + z)$

10)  $(5x^3)^2$

11)  $(-3y^4)^3$

12)  $(5mn^3)^2$

13) Fill in the blank with the correct number.

A.  $(x^3y^2)^2 = x^{\quad}y^{\quad}$

B.  $(2m^4)^{\quad} = 16x^{16}$

C.  $3x^{\quad}(x^3 - 5) = 3x^6 - 15x^{\quad}$

14) George has a rectangular garden measuring  $(2x)$  feet by  $(5x - 2)$  feet. Find the area AND perimeter of the garden.

$$\text{Area}$$

$$A = lw$$

$$\text{Perimeter}$$

$$P = 2l + 2w$$

15) Peter found that one side of a greeting card measured  $4x$  and another side measured  $2x + 3$ . Find the **area** of the greeting card.