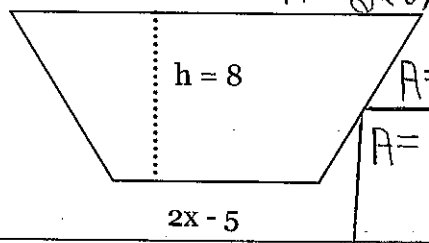
Name ANSWER KEY Block _____ Date _____

Unit 7: Polynomials REVIEW SHEET

1.) The area of trapezoid can be found using the formula: $A = \frac{1}{2}h(b_1 + b_2)$

Find the area of the trapezoid below:



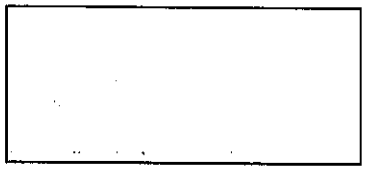
$A = \frac{1}{2}(8)(4x+3+2x-5)$

$A = \frac{1}{2}(8)(6x-2)$

$A = 4(6x-2)$

$A = 24x - 8$ units^2

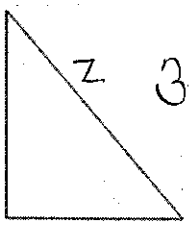
2.) Create an expression that represents the area of the rectangle.



$(2x+4)(x) = \text{AREA}$

$2x^2 + 4x$ units^2

3.) The perimeter of the triangle below is $7xy^2 + 10x - 2y$. Find the length of the missing side.



$3xy^2 + 2xy^2 + 3x + z = 7xy^2 + 10x - 2y$

$5xy^2 + 3x + z = 7xy^2 + 10x - 2y$

$z = 7xy^2 + 10x - 2y - (5xy^2 + 3x)$

$z = 2xy^2 + 7x - 2y$

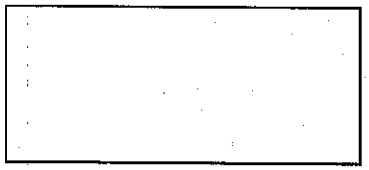
4.) Find the perimeter of a triangle with the following side lengths:

$y, -2y + 4, \text{and } 7y - 3$

$y + (-2y + 4) + (7y - 3)$

$6y + 1 = \text{PERIMETER}$

5.) A rectangle has a length of x inches and a width 3 inches less than the length.



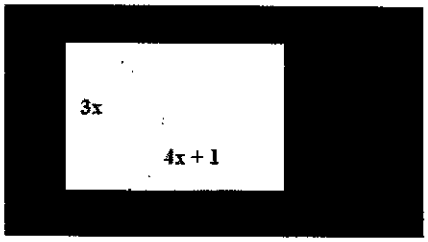
$x \longrightarrow 2x$

$x - 3 \longrightarrow 2x - 6$

If the dimensions were doubled, what would be the area, in square inches, of the new rectangle in terms of x? $2x(2x-6) = 4x^2 - 12x$

6.)

Find the area of the shaded region: ⟶ $\text{AREA}_{\text{shade}} = \text{AREA}_{\text{big}} - \text{AREA}_{\text{small}}$



$6x(4x-2) - 3x(4x+1)$

$24x^2 - 12x - (12x^2 + 3x)$

$24x^2 - 12x - 12x^2 - 3x$

$12x^2 - 15x = \text{AREA}_{\text{shade}}$

7.) Simplify and put your answer in standard form.

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

$-6y^7 + 2xy^5$

$\boxed{2xy^5 - 6y^7}$

8.) Simplify:

$3a(2b + c)$

$\boxed{6ab + 3ac}$

9.) What is the product of $(2x + 3)$ *and* $(x - 2)$?

F O I L

$(2x+3)(x-2)$

$2x^2 - 4x + 3x - 6$

$\boxed{2x^2 - x - 6}$

10.) Find the product: $(4 - 2b)(4 + 2b)$.

	4	$-2b$
4	16	$-8b$
$+2b$	$+8b$	$-4b^2$

$\boxed{-4b^2 + 16}$

11.) Find the product:

$(5xy^2)(-4y^3)$

$\boxed{-20xy^5}$

12.) Find the product:

$(-3n)(6n^2)(n^4)$

$\boxed{-18n^7}$

13.) Simplify:

$(x - 7)^2$

$(x-7)(x-7)$

$x^2 - 7x - 7x + 49$

$\boxed{x^2 - 14x + 49}$

14.) Simplify: $(4m + n^2)^2$

	$4m$	$+n^2$
$4m$	$16m^2$	$4mn^2$
$+n^2$	$4mn^2$	n^4

$\boxed{16m^2 + 8mn^2 + n^4}$

15.) Simplify:

$(2ab^2c^3)^3$

$(2)^3(a)^3(b^2)^3(c^3)^3$

$\boxed{8a^3b^6c^9}$

16.) Simplify:

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

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

$\boxed{9x^4y^{10}}$

17.) Which expression is equivalent to the expression below?

$(9m^4)^3$

A. $27m^{12}$

B. $729m^7$

C. $729m^{12}$

D. $27m^7$

$(9)^3(m^4)^3$

18.) Write an equivalent expression for the monomial below:

$(-4b^2)^4$

$(-4)^4(b^2)^4$

$256b^8$

19.) Find the sum:

$(-7x^2 + 4x + 6) + (-3x^2 + 5x - 1)$

$-10x^2+9x+5$

20.) Simplify the expression:

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

$y^3+y^2+5y+12$

21.) Find the difference:

$(4x^3 - 9x + 5) - (7x^2 + 2x - 6)$

$4x^3-9x+5-7x^2-2x+6$

$4x^3-7x^2-11x+11$

22.) Which expression is equivalent to the expression below?

$\frac{p^{-3}}{p^3}$ $p^{-3-3} = p^{-6}$

A. 1

B. p^{-6}

C. $\frac{1}{p^6}$

D. 0

23.) Simplify:

$\frac{a^{-2}b}{c}$

$\frac{b}{a^2c}$

24.) Which expression is equivalent to $\frac{p^7}{p^4}$ when $p \neq 0$?

A. $\frac{1}{p^3}$

B. p^3

C. p^{11}

D. $p^{\frac{7}{4}}$

25.) Simplify:

$$\frac{10a^4b + 25a^2b^3 - 5ab}{5ab}$$

$\frac{10a^4b}{5ab} + \frac{25a^2b^3}{5ab} - \frac{5ab}{5ab}$

$2a^3 + 5ab^2 - 1$

26.) Which expression is equivalent to $c^{-9}c^6$?

A. $\frac{1}{c^3}$ B. c^3

C. $\frac{1}{c^{-3}}$ D. $3c^3$

$c^{-9+6} = c^{-3}$

27.) Simplify:

$$\frac{12a^3b^2c}{18ab^6c}$$

$\frac{12}{18} a^{3-1} b^{2-6} c^{1-1}$

$\frac{2a^2}{3b^4}$

28.) Simplify $(3x - 1)(4x^2 + x - 5)$

$4x^2 + x - 5$

$3x$	$12x^3$	$3x^2$	$-15x$
-1	$-4x^2$	$-x$	$+5$

$12x^3 - x^2 - 16x + 5$

29.) Write a simplified expression for the polynomial below.

$$2x(x - 4) - 3x(8x - 1)$$

$2x^2 - 8x - 24x^2 + 3x$

$-22x^2 - 5x$

30.) Which expression is equivalent to $(-2x^2)^3(-y)^5$?

A. $2x^4y^6$ C. $8x^6y^5$

B. $8x^3y^3$ D. $8x^6y^4$

$(-2)^3(x^2)^3 \cdot (-1)^5(y)^5$

$-8x^6 \cdot -1y^5$

$8x^6y^5$