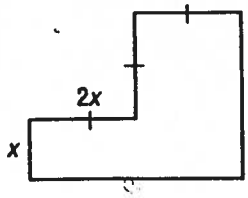
Name_____

Are You Ready for Your Algebra Test?

Application Type Questions

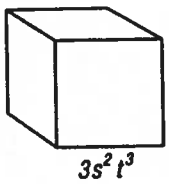
1. **The lengths of two sides of a triangle are given by the expressions $3a^2 - 5$ and $2a^2 + a + 1$. The perimeter of the triangle is $6a^2 - 5a + 1$. Draw and label the triangle and find the missing length. Show all your work and write a conclusion.**

2. **Find the area of the figure. Show your work.**



3. **Find the volume of the cube. Show your work and write a conclusion.**

(4A)



V = L x W x H
V =
V=

4. **Write an expression simplified form for the area of one face of the cube.**

Communication Type Questions

1. What two steps do you need to remember when you are asked to **Subtract** $8x^3 - 7x^2 + 8x - 3$ **from** $3x^3 + 9x^2 + 3$? Explain carefully! (6.4)

   a)_____

   b)_____

   Now Subtract $8x^3 - 7x^2 + 8x - 3$ from $3x^3 + 9x^2 + 3$.

2. What is the difference between a variable and a constant? Explain in words and give at least three examples. (See 6.1)

   A variable is _____

   A constant is _____

   Examples 1. 2. 3.

3. What are like terms? What does it mean to collect like terms? Explain in words and give at least three examples. (See 6.1)

   Like terms are _____

   To collect like terms means _____

   Examples 1. 2. 3.

4. Define the three different types of polynomials. Give examples. (See 6.2)

5. How do find the degree of a monomial? A binomial?

Math 9

Name_____

Algebra Review

Date_____

Expand and Simplify each expression.

1) $(4+5x^4+7x)+(4-8x+5x^4)$

2) $(3-7k^3-4k^2)-(2-7k^2+7k^3)$

3) $(8xy^2+x^2y^3-7x^3)+(6x^2y^3+8x^3+xy^2)-(7x^3+7x^2y^3)$

4) $5x^5 \cdot 4x$

5) $7n^4 \cdot 8n^3$

6) $x^5 \cdot 9x^2y^2$

7) $2x^2y^3 \cdot 7yx^4$

8) $\left(7x^3y^4\right)^2$

9) $\left(5m^4\right)^3$

10) $\left(-8x^2y^4\right)^0$

11) $\left(6xy^5\right)^3$

12) $4(x-2)-3(6-8x)$

13) $-10(5k+8)-7k(k+6)$

14) $-5n(1+n)+7n(-3n-9)$

15) $\dfrac{8xy^3}{2xy}$

16) $\dfrac{2x^2y^3}{6x^4y^2}$

17) $\left(\dfrac{n^4\cdot 4n^0}{4n^4}\right)^0$

18) $\dfrac{(4x)^4\cdot 2x^3}{2x^2}$

19) $\left(\dfrac{\left(2yx^3\right)^3}{2x^2\cdot x^4y^2}\right)^3$

Name:

Steps to remember in algebra....

When adding or subtracting, add or subtract the coefficients **OF ONLY LIKE TERMS** and **LEAVE** the exponents alone. When subtracting, first distribute the negative to all the terms in its bracket.

ex: $(3x^3-4x^2+5x)+(3x^2+8x^3)$ =

ex: $(4x^2+8x-2y)-(3y+2x^2-3x)$ =

When distributing, multiply the number in front of the brackets with each term inside its brackets.

ex: $5(x-2)$ =

ex: $3(2x-5x^2+3)-7(x^2-2+4x)$ =

When multiplying, multiply the coefficients and **ADD** the exponents.

ex: $(-4x^5y^2)(-20x^7y^4)$ =

ex: $-3x^3(2xy-7x^5y^2)$ =

When raising a monomial to a power, apply that power to the coefficient then **MULTIPLY** the exponents.

ex: $(-10x^4y^{12}z^3)^5$ =

When dividing, divide the coefficients and **SUBTRACT** the exponents.

ex: $\dfrac{14x^4y^5z}{-7x^3y^2z}$ =

ex: $\dfrac{10x^5-25x^2+5x}{5x}$ =

Remember: If there is a negative in brackets, an even exponent on the outside makes a positive answer and an odd exponent makes a negative answer.

Putting it all together:

ex: $(-4x^3y^2)^3 - 4(2x^2)^3(3x^3y^6)$

First do the exponents:

Then Multiply:

Now Add/Subtract: