First name: _____ Last name: _____

Review and practice (1)

Evaluate.

1. $-\left(\frac{4}{5}\right)^3$ 2. $\left(-\frac{4}{5}\right)^3$ 3. $-\left(-\frac{4^3}{5}\right)$ 4. $\frac{-3(-9+3)^2}{2^2-(-2)}$

5. $\frac{-3}{\left(-\frac{1}{3}\right)\div(8-4)} \div \left(-\frac{12}{5}\right)$ 6. $\left(\frac{1}{4}(2^2)+\left(-\frac{11}{5}\right)\right)^2$

7. Evaluate the expression $5x^3 - 2x^2$ when x = -1 2/3.

Solve Equations

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

5. Andrew went to the mall. He spent two dimes and five quarters at the mall. Before going to the mall, Andrew had seventy-six dimes and quarters, which totaled $13.60. How much money does he have left?

6. A triangle has angle measures that are related as follows: the largest angle is eight times the smallest angle, and the middle angle is triple the smallest angle. Find the measures of the angles.

7. The power, P, in an electric circuit is related to the current, I, and resistance, R, by the formula $P = I^2R$.
a) Find the power in watts (W), when the current is 0.5 A (amperes) and the resistance is 600 Ω (ohms).

b) What is the resistance of a circuit that uses 500 W of power with a current of 2 A?

c) The resistance in a circuit is 4 Ω. The same circuit uses 100 W of power. Find the current in the circuit.

Exponents

1. $(4a^3)(3a^2)$

2. $(-3a^4b^2)^3$

3. $\frac{(8x^5y^3)(-3x^4y)}{12x^6}$

4. $\frac{(2ab^2)(-3a^3b^3)}{(4ab^2)^2}$

5. Perform the following operations and express the answers in scientific notation.
a. $(1.2 \times 10^5) + (5.35 \times 10^6)$

b) $6.91 \times 10^{-2} + 2.4 \times 10^{-3}$

c) $4.3 \times 10^8 \times 2.0 \times 10^6$

d) $(1.5 \times 10^{-2}) \times (8 \times 10^{-1})$

e) $\frac{7.8 \times 10^3}{1.2 \times 10^4}$

f) $\frac{6.48 \times 10^5}{(2.4 \times 10^4)(1.8 \times 10^{-2})}$

Polynomials

1. Expand.

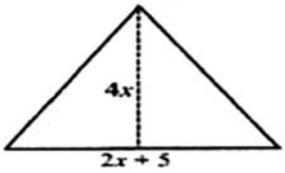
a) $x(2 + x) + 3(x^2 - 2x + 6)$

b) $2mn(4 - m + n) - 5mn(m - n + 3)$

c) $x^2(3x - 4) - 2x(5x - x^2)$

d) $(3x + 2)(3x – 2)$	e) $(3x - 5)(2x^2 + x - 8)$	f) $(4x – 5y)^2$
g) $(8x + 5)(7x + 9)$	h) $(9x + 7)(12x + 12)$	i) $(12x + 4)(2x + 4)$

2. Write a simplified expression for the area of the shape below.



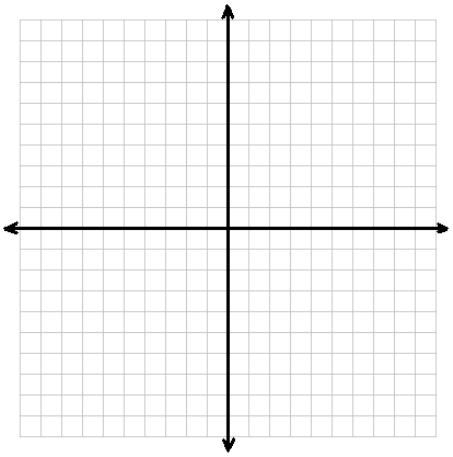
3. Fill in the blanks.

Expression	Type of Polynomial	Degree of the polynomial	Leading Coefficient	Constant Term
$3x^3 – 12x + 9$				
$-15x^2y^4z$				
-81				

Linear and Non-linear Relation

1. Identify which relations are linear and non-linear.
   a) $y = 2x^2$
   b) $y = \frac{1}{3}x - \frac{3}{4}$
   c) $y = 4x^3 + 7$
   d) $y = \frac{1}{2}x^2 + 3x - 9$

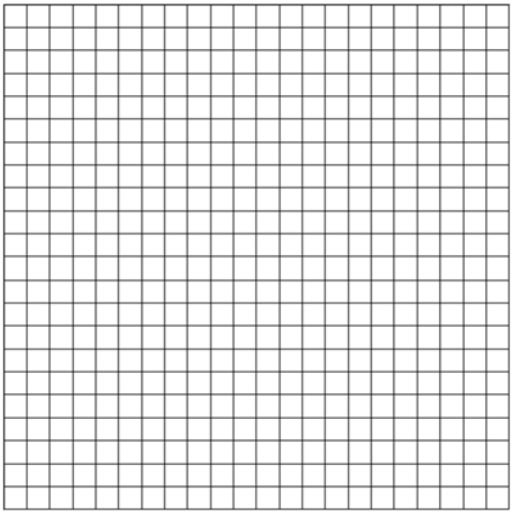
2. Given a linear relations, graph using table of values.
   a) $y = 5x + 3$ b) $5x + 2y = 10$



3. Is (3, -4) a solution of $2x – y = 10$? Show your work!

4. Plumbers 'R Us charge $20 for a house visit plus $30 per hour on the job.
   a) Create an equation of the cost, C, in dollars, using h as the numbers of hours on the job.

   b) Create a table of values for the relation for up to 5 hours on the job and graph the relation.



   d) Determine the cost for 4 hours.

e) How many hours did it take if the house paid $290?

5. Identify if the following relation is a function or not.