Name:_____

MATH 9: Unit Exam - (Chapter 5) Polynomials

1. Complete the following table:

Polynomial	Number of Terms	Variable(s)	Type of polynomial (monomial, binomial or trinomial)	Coefficient(s)	Constant	Degree
a) $5xy^3 + 2y^2 - 5$		,		,		
b) $2m^2 + 3m$				,		
c) -3						
d) $-4x^{10} - 3x + 2$				,		

2. Add the following. Show all steps:

a) $5m + 3m$

b) $(7 - 2y) + (-5 - 2y)$

c) $(a^2 + 5a + 3) + (2a^2 + 4a + 1)$

d) $(8r^2 - 7r + 3 + r^2) + (3r^2 - r - 7)$

3. Subtract the following. Show all steps:

a) $(-4r) - (7r)$

b) $(7x + 2) - (-2x + 1)$

c) $(11m^2 - 3m + 7) - (6m^2 + 2m - 5)$

d) $(7e + 5f - 2e^2 + 3f^2) - (-f^2 - 4e^2 + 2f - 8e)$

4. Multiply the following. Show all steps:

a) $(8r)(3)$

b) $(5m)(-2m)$

c) $7x(2x + y - 3)$

d) $2k^2(3k^2 + 5k - 2)$

5. Divide the following. Show all steps:

a) $30k \div 10$

b) $(-15n^2) \div (-3n)$

c) $\frac{18xy+15x^2y-3xy^2}{3xy}$

d) $\frac{-15a^2k^8 - 25a^4k^4 + 5ak^2}{-5ak^2}$

6. Create your own example of:

a) a monomial with degree one

b) a binomial with a constant term of -3

c) a trinomial with the variable "b" and coefficients of 2 and 5

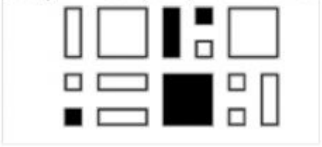
7. Identify which polynomials are equivalent by naming the matching sets.

a) $-3 + 4x - x^2$ b) $4x - x^2 - 3$ c) $x^2 - 4x + 3$

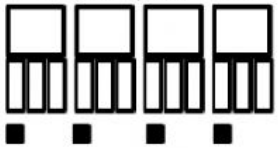
d) $-4x - 3 + x^2$ e) $-4x + x^2 + 3$ f) $-3 + x^2 - 4x$

_____ and _____ _____ and _____ _____ and _____

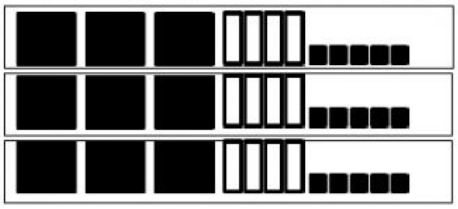
8. a) What polynomial do the following algebra tiles represent? Use variable x.



b) What multiplication sentence do the following algebra tiles represent? Use variable x.



c) What division sentence do the following algebra tiles represent? Use variable x.



9. A rectangle has dimensions an area of $10m^2 + 6m$ and a length of $5m + 3$. Sketch the rectangle and label its dimensions. Determine the <u>width</u> of the rectangle.

10. The perimeter of an equilateral triangle (a triangle whose sides are all equal length) is represented by the polynomial $15a^2 + 21a + 6$. Draw and label a picture of the triangle. <u>Determine the division expression</u> that represents the length of one side.

11. The length of a rectangular sandbox is $6x$ feet. It is $(4y + 6)$ feet wide. Draw and label a picture of the sandbox. What is the <u>area</u> of the sandbox?