MATH 9 - Unit 5 Quiz - Version 1 Name: _____

Perimeter: Addition of all sides
Simplest form: Simplified (all like terms paired up)
To SUBTRACT, change the signs of all terms on the polynomial that follows the subtraction sign:
This is called "ADDING THE OPPOSITE"

Multiple Choice (2 points each)
Identify the choice that best completes the statement or answers the question.

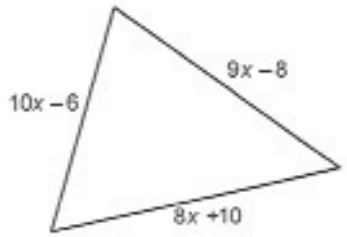
____ 1. Identify the polynomial that is "like" (equivalent to, the same to) $4 - 6v - 7v^2$.
i) $7v^2 + 6v - 4$
ii) $4 + 7v^2 - 6v$
iii) $-7v^2 - 6v + 4$
iv) $-7v^2 - 4 + 6v$
a. iv b. ii c. i d. iii

____ 2. Combine **like terms** (Simplify).
$3x + 8 + 7x - 2$
a. $10x + 6$ b. $11x + 5$ c. $16x$ d. $10x - 6$

____ 3. Simplify: $6x + 8x - 2x + 4x + 5$
a. $16x + 5$ b. $8x + 9$ c. $12x + 9$ d. $16x^4 + 5$

____ 4. Add: $(-3x - 7) + (5 - 2x)$
a. $-5x - 2$ b. $-5x + 12$ c. $-5x + 2$ d. $5x + 2$

____ 5. Write the **perimeter** of this triangle as a polynomial in **simplest form.**



a. $27x - 24$ b. $27x + 4$ c. $27x + 24$ d. $27x - 4$

____ 6. Add: $(-4x^2 + 3 - 7x) + (7 + x^2 + 10x)$
a. $-3x^2 - 3x + 10$
b. $-5x^2 - 3x + 10$
c. $-5x^2 + 3x + 10$
d. $-3x^2 + 3x + 10$

____ 7. Subtract: $(6x - 3) - (11x - 8)$
a. $-5x + 11$ b. $-5x + 5$ c. $-5x - 5$ d. $-5x - 11$

____ 8. Which of the following expressions are **monomials** with **degree 2**?

i) $2x^2 + 2x$
ii) $2x^2$
iii) x^2
iv) $2x$

a. ii and iii b. ii and iv c. iii and iv d. i and ii

____ 9. A large white square represents an x^2-tile, a large black square represents a $-x^2$-tile, a small white square represents a 1-tile, and a small black square represents a -1-tile.
How would you model the polynomial $-3x^2 - 4$ with algebra tiles?

a.

c.

b.

d.

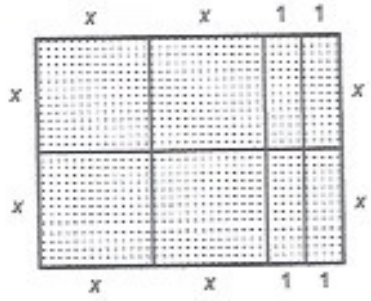
____ 10. Add the polynomials.

$$\begin{array}{r} 4x - 6 \\ +\ -8x + 11 \\ \hline \end{array}$$

a. $4x + 5$ b. $4x - 5$ c. $-4x - 5$ d. $-4x + 5$

Short Answer (3 points each)

11. Write a polynomial to represent the perimeter of the rectangle.



12. A large white square represents an x^2-tile, a large black square represents a $-x^2$-tile, a white rectangle represents an x-tile, and a black rectangle represents a $-x$-tile.

Write the polynomial sum modelled by this set of tiles.

13. The polynomial $5w + 11$ represents the cost, in dollars, of shipping a parcel with mass w kg by ground. The polynomial $9w + 14$ represents the cost of shipping a parcel with mass w kg by air.
    a) Write a polynomial for the **difference** (subtraction) in the costs of the two methods of shipping. (THAT IS, the cost of shipping by air MINUS the cost of shipping by ground)

    b) How much more does it cost to ship a 15-kg parcel **by air**? (Hint: Replace w with the weight given).

14. Subtract: $(5y^2 - 5x^2 + 3x - 8) - (2y^2 - 9x^2 - 7x - 7)$

Problem

15. Write a polynomial with the given variable, degree, coefficient, and number of terms.
(6 points or 2 points each)

a) Variable: p; degree: 2; coefficients: 2, –4; number of terms: 2

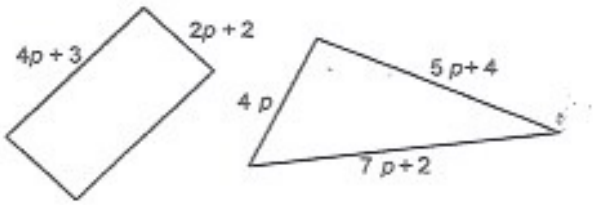
b) Variable: c; degree: 1; coefficient: 6; number of terms: 1

c) Variable: t; degree 2, coefficients: –3, 7; number of terms: 3; constant: 5

16. The box below contains the terms in a polynomial.
Group like terms, then simplify.

-2		8	$-5x$	
	$3x^2$			
$-4x$		$-4x^2$	$5x$	$3x^2$
		$-2x$		
9	$3x$		x^2	$-7x$
	$6x^2$	-5	$5x$	$-3x^2$

17. a) Write a simplified polynomial for the **perimeter of each shape below.** (Be careful to add a total of 4 sides for the rectangle, and 3 sides for the triangle!)



b) Subtract the perimeter of the rectangle from the perimeter of the triangle.

c) If $p = 4$, which shape has the greater perimeter? (That is, in each perimeter polynomial on a), substitute p with 4)