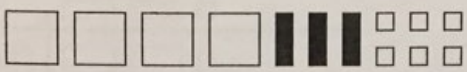
Name: _____ Class: _____ Date: _____ ID: A

Math 9 Unit 5 Polynomials Practice Test

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. A large white square represents an x^2-tile, a black rectangle represents a $-x$-tile, and a small white square represents a 1-tile.

Write the polynomial represented by this set of algebra tiles.



a. $4x^2 - x^3 + 6$ b. $-4x^2 + 3x + 6$ c. $4x - 3x^2 + 6$ d. $4x^2 - 3x + 6$

____ 2. Identify the polynomials that can be represented by the same set of algebra tiles.

i) $3x^2 - 5 + 2x$
ii) $3x^2 - 2x + 5$
iii) $-5 + 2x - 3x^2$
iv) $2x - 5 + 3x^2$

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

____ 3. Combine like terms. Sketch algebra tiles if it helps.

$10x^2 - 7x + 3x - 8x^2$

a. $2x^2 + 4x$ b. $-2x^2$ c. $2x^2 - 4x$ d. $3x^2 - 5x$

____ 4. Add: $(4x^2 - 5) + (5x^2 - 9x - 7)$

a. $9x^2 - 9x + 12$
b. $9x^2 - 9x - 12$
c. $20x^2 - 9x - 35$
d. $9x^2 - 14x - 7$

____ 5. Subtract: $(2r^2 - 3) - (5r^2 + 8r + 8)$

a. $3r^2 - 8r - 11$
b. $-3r^2 + 8r + 5$
c. $3r^2 + 8r + 5$
d. $-3r^2 - 8r - 11$

____ 6. Divide: $\frac{15w^2 - 12w + 9}{3}$

a. $5w^2 - 4w + 3$
b. $12w^2 - 9w + 6$
c. $12w^2 - 12w + 9$
d. $5w^2 - 12w + 9$

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____ 7. A large white square represents an x^2-tile, a white rectangle represents an x-tile, and a small white square represents a 1-tile.

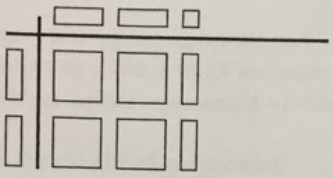
Which of these multiplication sentences is modelled by the algebra tiles below?

i) $2x(2x+1)$

ii) $2(2x^2+1)$

iii) $x(2x+1)$

iv) $2x(4x^2+2x)$



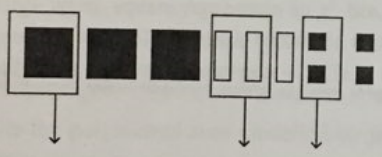
a. iv b. ii c. i d. iii

____ 8. Multiply: $(-q)(5p-8q)$

a. $-5pq+8q^2$ b. $5p+9q$ c. $4pq-9q^2$ d. $-5pq-8q$

____ 9. A large black square represents a $-x^2$-tile, a white rectangle represents an x-tile, and a small black square represents a -1-tile.

Write the subtraction sentence that these algebra tiles represent.



a. $(3x^2-3x+4)-(-x^2+2x-2)$

b. $(-3x^2+3x-4)-(-x^2-2x-2)$

c. $(-x^2+2x-2)-(-3x^2+3x-4)$

d. $(-3x^2+3x-4)-(-x^2+2x-2)$

Short Answer

10. Name the coefficients, variable, degree, and constant term in the polynomial $4x^2-8x+6$.

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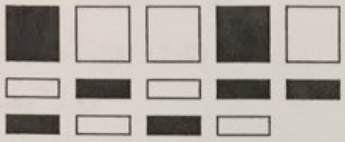
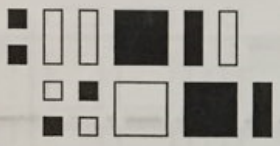
11. A large white square represents an x^2-tile, a large black square represents a $-x^2$-tile, a white rectangle represents an x-tile, and a black rectangle represents a $-x$-tile.

Write the simplified polynomial.



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, a black rectangle represents a $-x$-tile, a small white square represents a 1-tile, and a small black square represents a -1-tile.

Write the simplified polynomial.

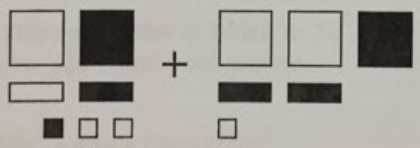


13. Group like terms, then simplify.

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

14. 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, a black rectangle represents a $-x$-tile, a small white square represents a 1-tile, and a small black square represents a -1-tile.

Write the polynomial sum modelled by this set of tiles.



15. Subtract: $(8y^2-2x^2+5x-11)-(5y^2-6x^2-9x-10)$

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16. Here is a student's solution for this question:

$(12x^2 - 15x - 3) \div (-3)$

$= \frac{12x^2}{-3} + (\frac{-15x}{-3}) + (\frac{-3}{-3})$

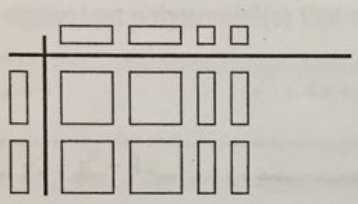
$= -4x^2 + (-5x) + (-0)$

$= -4x^2 - 5x$

Identify the errors in the solution.

17. A large white square represents an x^2-tile, a white rectangle represents an x-tile, and a small white square represents a 1-tile.

Write a division sentence that is modelled by these algebra tiles.



18. Determine the product: $(-4x)(5x + 6y - 4z)$

Problem

19. A box contains 4 x-tiles, 2 $-x$-tiles, 5 y-tiles, 10 $-y$-tiles, and 5 -1-tiles.
Write the polynomial represented by these tiles, then simplify.

20. Create a polynomial that is added to $5x^2 + 6x + 9$ to get $7x^2 + 9x + 14$.
Explain how you found your answer.

21. Divide: $\frac{10x^2 - 45x + 75y - 250y^2}{5}$

Show your work.

Master 5.17

PRACTICE Test: Unit 5 Polynomials

(ver.11-09-A)

Name:_____ Date:_____

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(2 marks for each question, unless otherwise noted)

1). Identify the polynomials in the following expressions.

$2m^2+1$ $3x^{\frac{1}{2}}$ $-4x$ $\frac{1}{x^2+x}$ $0.25y^2$

2). Identify each polynomial as a monomial, binomial, or trinomial.

$19t$ $g-4g^2+5$ $-1+xy+y^2$ $4-11w$

_____ _____ _____ _____

3). Circle the equivalent polynomial(s) that are equivalent to: x^2-4x-3.

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

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

4). Write a polynomial using the given information.

A.) A binomial that contains the variable x, with constant term -2, and the coefficient of the other term is -3

B.) A trinomial that contains the variable k, the coefficient of the second degree term is -1, the coefficient of the first degree term is 5, and the constant term is -8.

5). Use algebra tiles to model each polynomial. Sketch the tiles.

A.) $2x-1$

B.) $-3a^2-2a+1$

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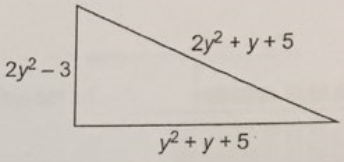
). Simplify each polynomial.

A.) $3a^2 - 2a - 4 + 3a - 2a^2 - 1$

B.) $-6x^2 + 10x - 4 + 3 - 12x - 7x^2$

). Write an expression for the perimeter of this triangle. Simplify the polynomial.



). Determine the perimeter of the triangle in the previous question if $y = 3$ cm.

). Use algebra tiles, sketch your tile model representing: $(4x+2)-(-2x+1)$.
Record your answer symbolically.

0). Add or subtract as indicated.

A.) $(3x + 6) - (x - 2) =$

B.) $(3y + 7y^2 + 9) - (3y^2 + 4y)$

C.) $(x - 3x^2) + (7 + 3x - 3x^2)$

D.) $(-5y^2 - y + 9) - (-2y^2 - y - 4)$

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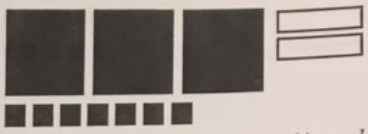
11). Create one addition and one subtraction question that gives this result.



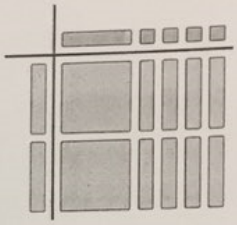
Addition

_____ + _____ = _____

(4 marks)

Subtraction

12). Write the multiplication sentence and the division sentence modelled by this set of algebra tiles.



Multiplication

( ) ( ) =

(4 marks)

Division

13). Multiply or divide as indicated.

A.) $2(-5r-3)$

_____

B.) $\frac{12p^2-18p+24}{-6}$

_____

C.) $(1+3f-4f^2)(-6)$

_____

D.) $(8y^2-6y+2)\div(-2)$

_____

E.) $3c(5c-2)$

_____

F.) $(-1-10r)(-r)$

_____

_____

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G.) $\dfrac{8v^2+4v}{2v} =$

H.) $(-6x+9xy)\div(-3x) =$

4). Identify the error(s) in the solution. Complete the correct solution on the right.

$3x(2x+1)$

$= 6x + 3x$

$= 9x$

5). The perimeter of a rectangle is $8s^2+12s$. If the width of the rectangle is $4s$, what is the length?
Explain your strategy.

Length = _____

6). Here is a student's solution for a division question.

$(-12x^2-9x)\div(-3x)$

$= \dfrac{-12x^2-9x}{-3x}$

$= \dfrac{-12x^2}{-3x} - \dfrac{9x}{-3x}$

$= 4x^2 - 3$

A.) Explain why the student's solution is incorrect.

B.) Complete a correct solution on the space to the right of the student's solution.

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Polynomial Review

Date_____ Period____

Simplify each expression.

1) $(x+3-7x^2)-(2x+3x^2+8)$

2) $(3k-7k^4+5k^3)-(8k^3-2+2k)$

3) $(7p+3+7p^2)+(6p^2+5p-6)$

4) $(1-2k-8k^4)+(3k^4-8k-2)$

5) $(7x^2y^4+7x^3y^4)+(3x^3y^4+x^2y^4)$

6) $(5y^3-5y^4)+(2y^3-8y^4)$

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

8) $(2+3y^4)-(8+6y^4)$

Find each product.

9) $-3a(a+3)$

10) $3x^4(-6x+5)$

11) $-(-8x-1)$

12) $5a(-a-1)$

13) $2m^2(8m^2+7mn+4n^2)$

14) $-5x(2x^2+3xy-8y^2)$

15) $-7xy(2x^2+5xy+7y^2)$

16) $-6x(-4x^2+4xy-7y^2)$

ebra 1

Name_____

signment

Date_____ Period____

ide.

$(10n^3 + 5n^2 + 5n) \div 10n^2$

2) $(18n^6 + 2n^5 + 2n^4) \div 6n^2$

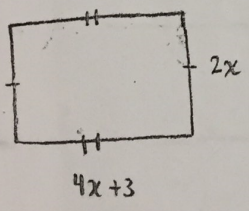
$(45x^3 + 36x^2 + 9x) \div 9x$

4) $(4v^3 + 24v^2 + 8v) \div 8v$

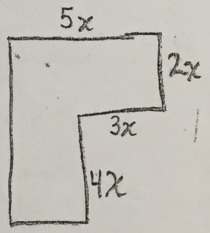
Perimeter questions

nat is the area and perimeter of the following shapes

i)



ii)



If x=2 then what is the value of the Area and Perimeter from (i) & (iii)