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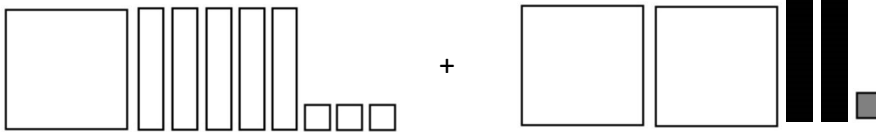
Date: _____

adapted from: BLM 4-10

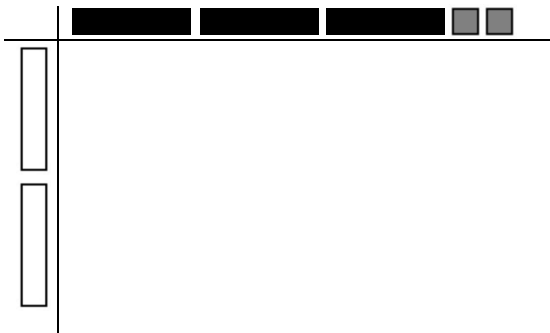
Chapter 4 Practice Test

1. State the algebraic expression represented by each set of algebra tiles. Simplify each expression.

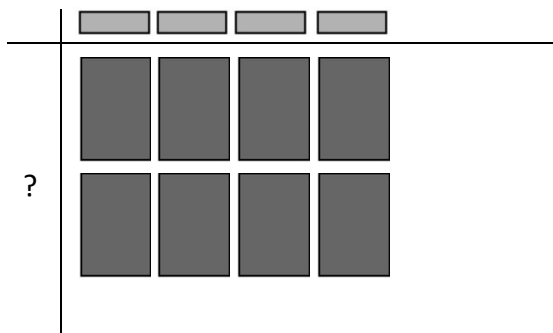
a)



b)



c)



2. Complete the table.

Term	Coefficient	Degree of Term	Variable(s)
$-5x$			
$8ac$			
$2m^2$			
$\frac{1}{3}y^2z$			
10			

3. Provide an example of each.

a) binomial of degree 1

b) trinomial of degree 2

c) 4-term polynomial of degree 2

4. Simplify.

a) $(2x + 4) + (5x + 3)$

b) $(k^2 + 9k) + (3k^2 - 4k)$

c) $(2y + 1) - (3y + 5)$

d) $(5x^2 - 4x - 9) - (3x^2 - 2x + 5)$

e) $(w^2 + 3w + 2) + (-7w^2 + 2w - 6) - (5w^2 - 4w - 3)$

f) $(7a^2 - 5b^2) - (5a^2 - 7b^2) + (a^2 + 3b^2)$

5. Describe how you would use either algebra tiles or an algebraic method to multiply $4x(2x - 3)$.

6. Simplify.

a) $-5(2m + 4)$

b) $7(8k^2 - 5k + 1)$

c) $-3x(4x - 8)$

d) $\frac{1}{4}a(8a^2 + 12a - 4)$

e) $\frac{10w^2 - 15w + 25}{-5}$

f) $(12x^2 + 6x) \div 3x$

7. Expand and simplify.

a) $5(3y - 4) + 2(7y + 3)$

b) $\frac{1}{3}(6x + 9) - \frac{5}{6}(18x - 6)$

c) $-3(2n - 4) - 9(5n + 3)$

d) $\frac{1}{2}g(3g + 5) - \frac{3}{5}g(2g + 7)$

8. A company makes re-useable shopping bags to sell to stores. Small ones sell for \$0.74 each and large ones for \$1.26 each. An expression for the total cost of a shopping bag order is $0.74S + 1.26L$.

a) What do the variables S and L represent?

b) How much would a store pay for 1000 small and 1500 large shopping bags?

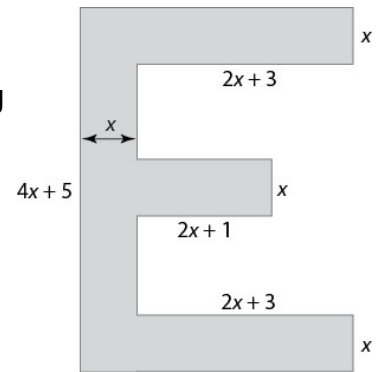
c) Write a new expression for the cost if the prices were cut in half.

d) How can you modify the given expression if the company started selling medium-sized bags for \$0.90 each?

EXTRA CHALLENGE

9. A school crest uses the letter E in various sizes, depending on its use. Its dimensions are shown in the diagram.

- a) State an expression for the perimeter of this crest.
Simplify your expression.



- b) State an expression for the area of this crest. Simplify your expression.

- c) Confirm that both versions of the perimeter and area expressions are the same for $x = 3$ cm.

1. a) $(-x^2 - 5x - 3) + (-2x^2 + 2x + 1) = -3x^2 - 3x - 2$ b) $-2x(3x + 2) = -6x^2 - 4x$ c) $8xy \div 4y = 2x$

2.

Term	Coefficient	Degree	Variable(s)
$-5x$	-5	1	x
$8ac$	8	2	a, c
$2m^2$	2	2	m
$\frac{1}{3}y^2z$	$\frac{1}{3}$	3	y, z
10	10	0	none

3. Answers will vary. Examples: a) $8x + 7$ b) $5x^2 + 6x + 8$ c) $2x^2 + 6xy + y - 3$

4. a) $7x + 7$ b) $4k^2 + 5k$ c) $-y - 4$ d) $2x^2 - 2x - 14$ e) $-11w^2 + 9w - 1$ f) $3a^2 + 5b^2$

5. Answers may vary. Example:

To use algebra tiles, put 4 x -tiles along the top of a frame. Put 2 x -tiles and 3 negative 1-tiles along the side. Fill in the middle with 8 x^2 -tiles and 12 $-x$ -tiles. So, $4x(2x - 3) = 8x^2 - 12x$.

To use algebra, multiply both terms inside the bracket by $4x$. So, $4x(2x - 3) = (4x)(2x) - (4x)(3) = 8x^2 - 12x$

6. a) $-10m - 20$ b) $56k^2 - 35k + 7$ c) $-12x^2 + 24x$ d) $2a^3 + 3a^2 - a$ e) $-2w^2 + 3w - 5$ f) $4x + 2$

7. a) $29y - 14$ b) $-13x + 8$ c) $-51n - 15$ d) $\frac{3}{10}g^2 - \frac{17}{10}g$

8. a) S represents the number of small bags sold. L represents the number of large bags sold. b) \$2630

c) $0.37S + 0.63L$ d) Add another term, $0.9M$, where M is the number of medium bags sold: $0.74S + 0.9M + 1.26L$.

9. a) $3x + 2(2x + 3) + (4x + 5) + (x + 5) + 2(3x + 3) + 2(2x + 1) = 22x + 24$

b) $2x(2x + 3) + x(2x + 1) + x(4x + 5) = 10x^2 + 12x$ c) $P = 90 \text{ cm}; A = 126 \text{ cm}^2$