Name: _____ Date: _____

...BLM 5–5...

Target C-1 Extra Practice 1

1. For each expression

i) identify the number of terms

ii) identify the expression as a monomial, binomial, or trinomial

a) $-2x^2$ i) _____ ii) _____

b) $a + b^2 + s$ i) _____ ii) _____

c) $y - 5$ i) _____ ii) _____

d) $3d^2 - 5xy$ i) _____ ii) _____

e) r i) _____ ii) _____

f) $b^2 - 2b + 7$ i) _____ ii) _____

2. Identify each polynomial below as a monomial, binomial, or trinomial. If it is none of these, identify it as a polynomial.

$c + d$ $3y$ $-7e^2 - 4f$ $a^2 - 3n - 6a - 5n^2$

x^2 $m^2 - n - 8$ $a + 2b - 2c - 3d$ $4z^2 - y^2 - 6$

Monomials	Binomials	Trinomials	Polynomials
_____	_____	_____	_____
_____	_____	_____	_____

3. For each expression

i) identify the number of terms

ii) state whether the expression is a monomial, binomial, or trinomial

a) $6t$ i) _____ ii) _____

b) $x^2 + 3y - 2$ i) _____ ii) _____

c) $9 - r$ i) _____ ii) _____

d) $a - 2b + 4ab$ i) _____ ii) _____

e) $-cd$ i) _____ ii) _____

f) $5s^2 - st$ i) _____ ii) _____

4. State the degree for each of the polynomials in #3.

a) _____ **b)** _____ **c)** _____

d) _____ **e)** _____ **f)** _____

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5. For each polynomial
i) state the degree
ii) state the number of terms

a) $f + g + h$	i) _____	ii) _____
b) $m^2 - mn + n^2$	i) _____	ii) _____
c) $x - y$	i) _____	ii) _____
d) s^2	i) _____	ii) _____
e) 31	i) _____	ii) _____
f) $5d^2 + dh - 11h^2 + 3$	i) _____	ii) _____

6. Write the expression represented by each set of algebra tiles.

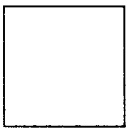
 = positive 1-tile

 = negative 1-tile

 = positive x-tile

 = negative x-tile

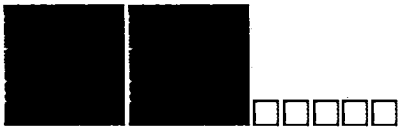
 = positive x^2

 = negative x^2

a)  _____

b)  _____

c)  _____

d)  _____

7. For the polynomial $3a^2 - 4ac - 8$ state the following.

a) Number of terms _____ **b)** Coefficient of the first term _____

c) Coefficient of the second term _____ **d)** Number of variables _____

e) Degree of polynomial _____ **f)** Constant term _____

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C-1 Extra Practice 1 (#1-7)

Extra Practice Answers

1. a) i) 1 ii) monomial **b)** i) 3 ii) trinomial
c) i) 2 ii) binomial **d)** i) 2 ii) binomial
e) i) 1 ii) monomial **f)** i) 3 ii) trinomial
2. Monomials: $3y$, x^2
Binomials: $c + d$, $-7e^2 - 4f$
Trinomials: $m^2 - n - 8$, $4z^2 - y^2 - 6$
Polynomials: $a^2 - 3n - 6a - 5n^2$, $a + 2b - 2c - 3d$
3. a) i) 1 ii) monomial **b)** i) 3 ii) trinomial
c) i) 2 ii) binomial **d)** i) 3 ii) trinomial
e) i)1 ii) monomial **f)** i) 2 ii) binomial
4. a) 1 **b)** 2 **c)** 1 **d)** 2 **e)** 2 **f)** 2
5. a) i) 1 ii) 3 **b)** i) 2 ii) 3 **c)** i) 1 ii) 2
d) i) 2 ii) 1 **e)** i) 0 ii) 1 **f)** i) 2 ii) 4
6. a) $-x + 3$ **b)** $x^2 + x - 2$
c) $-2x^2 - 3x + 4$ **d)** $2x^2 - 5$
7. a) 3 **b)** 3 **c)** −4 **d)** 2 **e)** 2 **f)** −8

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....BLM 5–7....

Target C-2 Extra Practice 1

1. Determine

i) the value of the coefficient

ii) the number of variables for each term

a) $-t$ i) _____ ii) _____ **b)** $4d^2$ i) _____ ii) _____

c) 12 i) _____ ii) _____ **d)** $-8de$ i) _____ ii) _____

e) b i) _____ ii) _____ **f)** $-c^2$ i) _____ ii) _____

2. Match the expression with its description by placing the correct letter in the blank.

A $-4x$ _____ a constant

B 17 _____ a binomial with two variables

C $2ab$ _____ -1 is the coefficient

D $3y^2 - 2y$ _____ -4 is the coefficient

E $-m$ _____ a binomial with a degree of 2

F $5x - 3y$ _____ a monomial with a degree of 2

3. Circle the like terms in each group.

a) $4x, 4y, x^2, -x, y^2$

b) $6, 2x, -2.5, 3y, -0.1$

c) $a, 4b, -3ab, 7a, 1.5a$

d) $-f, 3ef, f^2, -6f^2, 5e$

e) $6st, -10s, \frac{3}{4}st, -st, t$

f) $pq, -0.6p^2, 5q, -p^2, 10p^2$

g) $0.5jk, -jk, j^2, 6jk, -k$

h) $\frac{2}{5}, \frac{1}{2}r, 0.12, r^2, 9$

4. Collect like terms.

a) $3m - m^2 - 6 + 3m^2$

_____

b) $-4k - k^2 + 5k - 7k^2 + 8$

_____

c) $-c - c^2 + 3c + c^2$

_____

d) $7 - 10 + 5n - n + 9 + 8n$

_____

e) $-2b^2 - 7b + 3b^2 - 8b + b$

_____

f) $w^2 - 3w - 8w^2 + 7w^2 + 10w$

_____

g) $-2a - 1 - a - 7 - 5a$

_____

h) $3s + 6 - 6s^2 - 8 + 7s - 2s^2$

_____

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5. A rectangle's length is 7 cm greater than its width, w.

a) Draw the rectangle and label its dimensions.

b) Write the expression to find its perimeter.

c) Collect like terms.

6. The cost of publishing the school yearbook was $440. The yearbook committee priced the yearbook at $8.

a) Write an expression that represents the profit, p, for the number of yearbooks sold, n.

b) How many yearbooks need to be sold for the yearbook committee to break even?

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TARGET C-2 EX. Practice 1 (# 1-6)

Extra Practice Answers

1. a) i) −1 ii) 1 **b)** i) 4 ii) 1 **c)** i) no coefficient ii) 0 **d)** i) −8 ii) 2 **e)** i) 1 ii) 1
f) i) −1 ii) 1
2. B, F, E, A, D, C
3. a) $4x$, $-x$ **b)** 6, −2.5, −0.1
c) a, $7a$, $1.5a$ **d)** f^2, $-6f^2$
e) $6st$, $\frac{3}{4}st$, $-st$ **f)** $-0.6p^2$, $-p^2$, $10p^2$
g) $0.5jk$, $-jk$, $6jk$ **h)** $\frac{2}{5}$, 0.12, 9
4. a) $2m^2 + 3m - 6$ **b)** $-8k^2 + k + 8$
c) $2c$ **d)** $12n + 6$ **e)** $b^2 - 14b$ **f)** $7w$
g) $-8a - 8$ **h)** $-8s^2 + 10s - 2$
5. a)

b) $P = w + (w + 7) + w + (w + 7)$
c) $4w + 14$
6. a) $p = 8n - 440$ **b)** $8n = 440$, $n = 55$. It breaks even after selling 55 yearbooks.

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....BLM 5–9....

Target C-2 Extra Practice 2

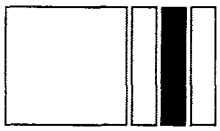
1. Add the polynomials by collecting like terms. Then, simplify.

a) $(3x^2 - 2x) + (x^2 + x)$
b) $(4n^2 - 2n - 4) + (-n^2 + 5n)$
c) $(7r - 8) + (3r^2 - 11)$
d) $(2b^2 - 8b) + (-2b^2 + 11b)$
e) $(7t^2 - 6t + 9) + (-2t^2 + 6t - 5)$
f) $(-14k - 10) + (8k - 23)$

2. Determine the opposite of the expression represented by each diagram. Express the answer in diagrams and symbols.

■ = positive 1-tile
□ = negative 1-tile
▬ = positive x-tile
▭ = negative x-tile
■ = positive x^2
□ = negative x^2

a) 

b) 

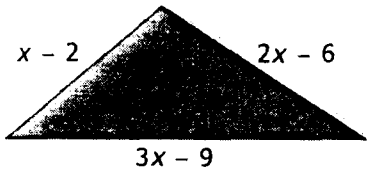
3. Determine the opposite of each expression.

a) $6a$
b) $-3c^2 - 9$
c) $d^2 - 8d + 2$
d) $6w^2 + 4w - 0.8$

4. Subtract the polynomials by adding the opposite terms, collecting like terms, and then simplifying.

a) $(5a - 4) - (3a - 2)$
b) $(7 - 6r) - (3 + r)$
c) $(6y^2 - 2y) - (-y^2 - 3y)$
d) $(8 - 5t) - (-9 - 4t)$
e) $(h - 1) - (3h^2 + 7)$
f) $(4k^2 - 6k + 1) - (-2k^2 + 5)$

5. A triangle has the dimensions shown.



a) Write the unsimplified expression for the perimeter of the triangle.
b) If $x = 6$, what is the perimeter? Show your work.
c) Simplify the expression in part a) for the perimeter of the triangle. Show your work.
d) Use the simplified expression to verify the perimeter when $x = 6$. Show your work.

Name: _____ Date: _____

C2 Extra Practice 2 (#1-5)

Extra Practice Answers

1. a) $3x^2 + x^2 - 2x + x$, $4x^2 - x$
b) $4n^2 - n^2 - 2n + 5n - 4$, $3n^2 + 3n - 4$
c) $3r^2 + 7r - 8 - 11$, $3r^2 + 7r - 19$
d) $2b^2 - 2b^2 - 8b + 11b$, $3b$
e) $7t^2 - 2t^2 - 6t + 6t + 9 - 5$, $5t^2 + 4$
f) $-14k + 8k - 10 - 23$, $-6k - 33$
2. a)

$-2x + 3$

b)

x^2+3x
3. a) $-6a$ **b)** $3c^2 + 9$
c) $-d^2 + 8d - 2$ **d)** $-6w^2 - 4w + 0.8$
4. a) $(5a - 4) + (-3a + 2)$, $5a - 3a - 4 + 2$, $2a - 2$
b) $(7 - 6r) + (-3 - r)$, $-6r - r + 7 - 3$, $-7r + 4$
c) $(6y^2 - 2y) + (y^2 + 3y)$, $6y^2 + y^2 - 2y + 3y$, $7y^2 + y$
d) $(8 - 5t) + (9 + 4t)$,$-5t + 4t + 8 + 9$, $-t + 17$
e) $(h - 1) + (-3h^2 - 7)$, $-3h^2 + h - 1 - 7$, $-3h^2 + h - 8$
f) $(4k^2 - 6k + 1) + (2k^2 - 5)$, $4k^2 + 2k^2 - 6k + 1 - 5$, $6k^2 - 6k - 4$
5. a) $(x - 2) + (2x - 6) + (3x - 9)$
b) $(6 - 2) + [2(6) - 6] + [3(6) - 9] = 19$
c) $x + 2x + 3x - 2 - 6 - 9 = 6x - 17$
d) $6(6) - 17 = 19$

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....BLM 7–5....

Target C-3 Extra Practice 1

= positive x-tile

= positive x^2-tile

= positive y-tile

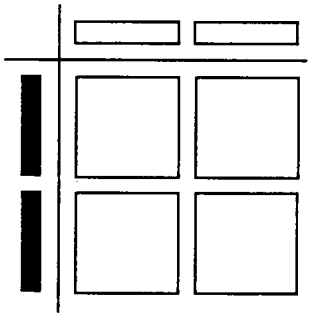
= negative x-tile

= negative x^2-tile

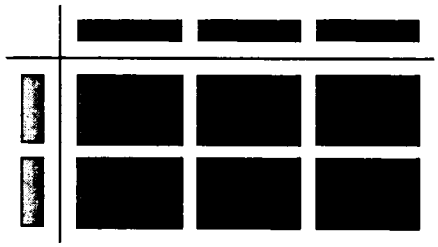
= positive xy-tile

1. Write a monomial multiplication statement for each set of algebra tiles.

a)



b)



2. Represent each of the following monomial multiplication statements with a model. Determine each product.

a) $(-3x)(-2x)$ **b)** $(x)(4x)$

3. Determine the product of each pair of monomials.

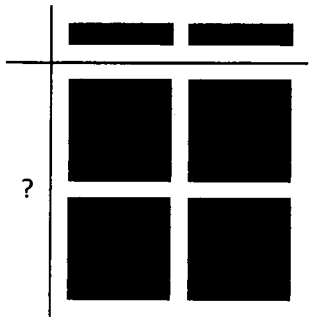
a) $(-4x)(2x)$ **b)** $(3y)(7y)$

c) $(5x)(-3y)$ **d)** $(6m)(-0.2m)$

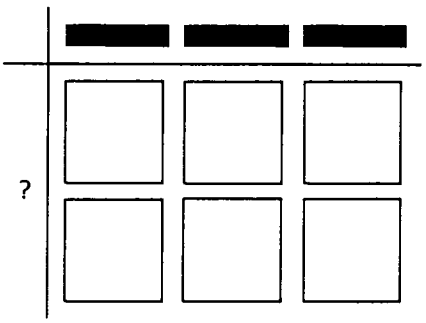
e) $\left(\frac{2}{3}n\right)(12n)$

4. Write a monomial division statement for each set of algebra tiles.

a)



b)



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5. Represent each of the following monomial division statements with a model. Determine each quotient.

a) $\frac{8x^2}{4x}$ **b)** $\frac{6xy}{3y}$

6. Determine the quotient of each pair of monomials.

a) $\frac{16x^2}{-8x}$ **b)** $\frac{15xy}{3y}$

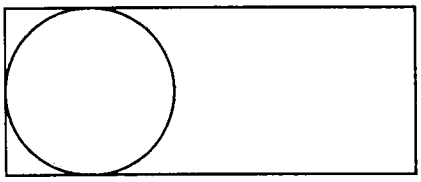
c) $\frac{-9mn}{-3mn}$ **d)** $\frac{12xy}{8x}$

e) $\frac{-14.2m^2}{2m}$

7. A triangle has a base of $12x$ cm and a height of $3.4x$ cm. What is the area of the triangle?

8. The area of a parallelogram is $25.6x^2$ m². Determine the height if the base is $8x$ m.

9. Marko's rectangular lawn has an area of $36x$ m². The length of the lawn is 9 m. Marko wants to add a circular cement patio. What is the area of the largest circular patio that he could add? Show all calculations. Use the symbol for pi, π, not an approximate value.



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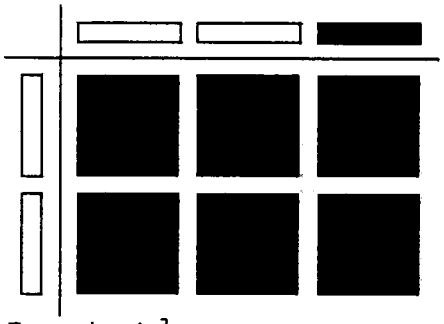
C3 Extra Practice 1 (#1-9)

Extra Practice Answers

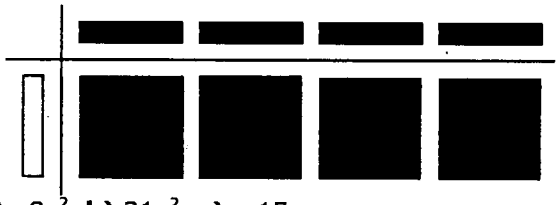
1. a) $(2x)(-2x) = -4x^2$ **b)** $(2y)(3x) = 6xy$

2. Shaded tiles are positive, and white tiles are negative.

a) Example: $6x^2$



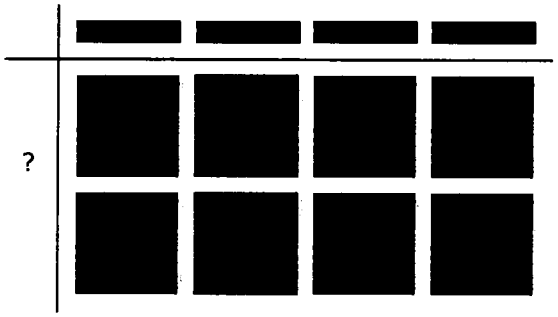
b) Example: $4x^2$



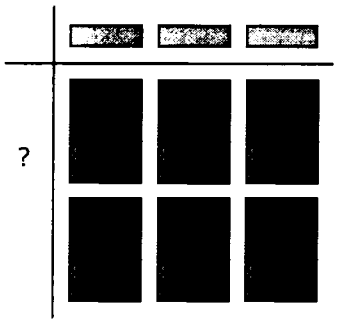
3. a) $-8x^2$ **b)** $21y^2$ **c)** $-15xy$
d) $-1.2m^2$ **e)** $8n^2$

4. a) $\frac{4x^2}{2x} = 2x$ **b)** $\frac{-6x^2}{3x} = -2x$

5. a) Example: $2x$



b) Example: $2x$



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6. a) $-2x$ **b)** $5x$ **c)** 3 **d)** $\frac{3}{2}y$ or $1\frac{1}{2}y$ **e)** $-7.1m$

7. $(20.4x^2)$ cm^2 **8.** $(3.2x)$ m

9. Width of lawn = $\frac{36x}{9} = 4x$ m

Diameter of circle = $4x$ m, radius = $2x$ m
Area of circle = $\pi(2x)^2 = \pi 4x^2$ m^2

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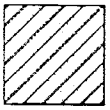
....BLM 7–7....

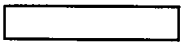
Target C-3 Extra Practice 2

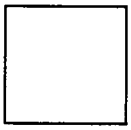
 = positive 1

 = positive x

 = positive x^2

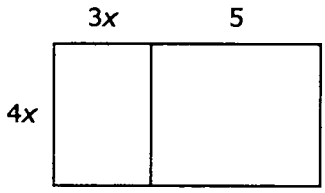
 = negative 1

 = negative x

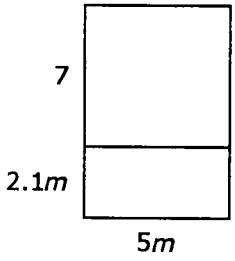
 = negative x^2

1. What polynomial multiplication statement is represented by each area model?

a)



b)



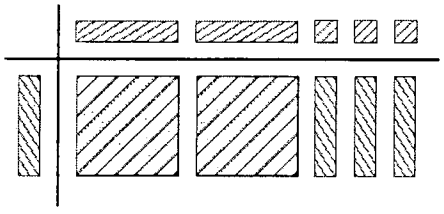
2. Use an area model to expand each expression.

a) $(3x)(2x - 1)$

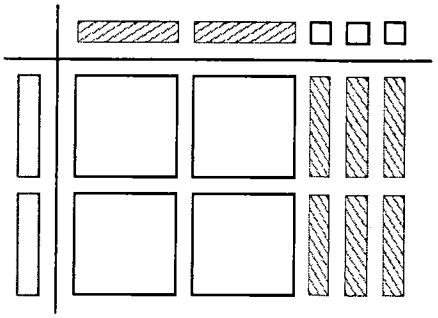
b) $(4d + 3)(3d)$

3. Determine the polynomial multiplication statement shown by the diagrams.

a)



b)



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4. Use models to expand each expression.

a) $(4x + 1)(2x)$

b) $(-x)(x + 4)$

c) $(2x)(3x - 1)$

5. Use the distributive property to expand each expression.

a) $(5m)(2m + 3)$

b) $(-n)(n + 1)$

c) $(1.3x)(2x - 5)$

d) $(-m + 2)(3m)$

e) $(4.1k - 5.3)(-3k)$

6. Multiply.

a) $(4m + 1)(3m)$

b) $(2x - 3)(-4x)$

c) $(4.2n)(2n - 7)$

d) $\left(\frac{2}{3}m+4\right)(-9m)$

e) $\left(\frac{-4}{3}x\right)(6x-12)$

7. The length of a cement pad on a playground is 3 m longer than the width. The width is $5x$ m.

a) Write an expression for the area of the cement pad.

b) If $x = 2$ m, what is the area of the cement pad?

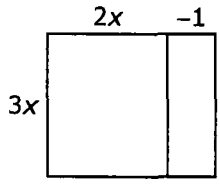
Name: _____ Date: _____

C3 Extra Practice 2 (#1-7)

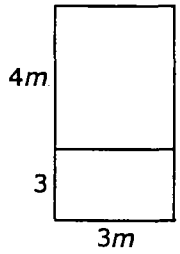
Extra Practice Answers

1. a) $(4x)(3x + 5)$ **b)** $(2.1m + 7)(5m)$

2. a) $6x^2 - 3x$

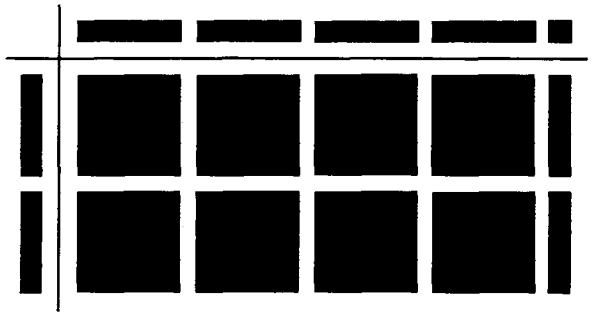


b) $12d^2+9d$

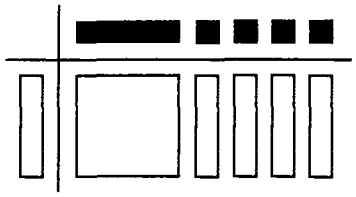


3. a) $(x)(2x + 3) = 2x^2 + 3x$
b) $(-2x)(2x - 3) = -4x^2 + 6x$

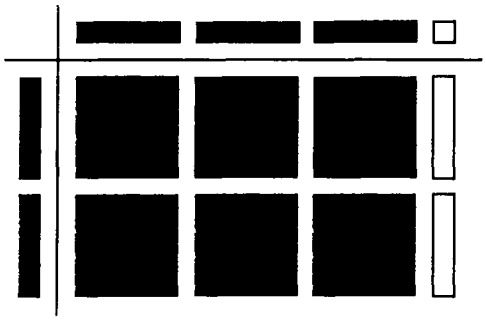
4. a) $8x^2 + 2x$



b) $-x^2 - 4x$



c) $6x^2 - 2x$



5. a) $(5m)(2m) + (5m)(3) = 10m^2 + 15m$
b) $(-n)(n) + (-n)(1) = -n^2 - n$

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c) $(1.3x)(2x) - (1.3x)(5) = 2.6x^2 - 6.5x$
d) $(-m)(3m) + (2)(3m) = -3m^2 + 6m$
e) $(4.1k)(-3k) - (5.3)(-3k) =$
$-12.3k^2 + 15.9k$
6. a) $12m^2 + 3m$ **b)** $-8x^2 + 12x$
c) $8.4n^2 - 29.4n$ **d)** $-6m^2 - 36m$
e) $-8x^2 + 16x$
7. a) Area $= (5x)(5x + 3) = 25x^2 + 15x$
b) The area of the cement pad is 130 m^2.

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....BLM 7-9....

Target C-3 Extra Practice 3

= positive 1-tile

= positive x-tile

= positive x^2-tile

= positive y-tile

= negative 1-tile

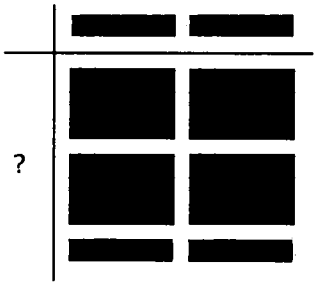
= negative x-tile

= negative x^2-tile

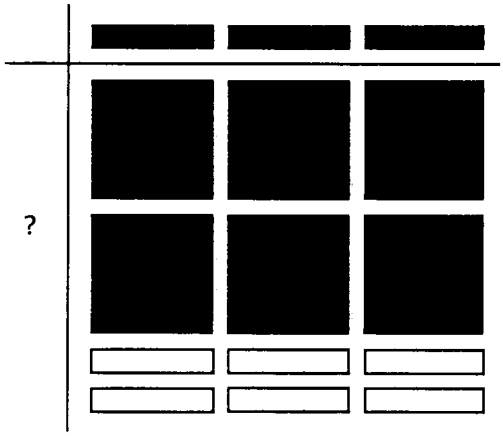
= positive xy-tile

1. What polynomial division statement is represented by the algebra tiles? Determine the quotient.

a)



b)



2. Use a model to divide each expression. Determine the quotient.

a) $\frac{9x^2 - 3x}{-3x}$

b) $\frac{4x^2 + 6x}{2x}$

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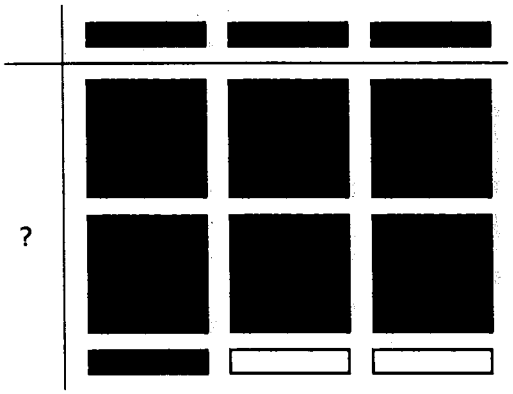
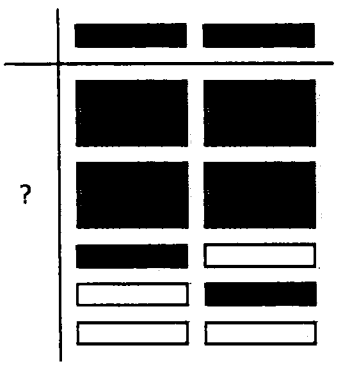
3. Determine the polynomial division statement shown by the algebra tiles. Determine the quotient.

a)



b)



4. Use algebra tiles to divide each of the following expressions.

a) $\frac{4x^2 - 6x}{-2x}$

b) $\frac{9x^2 + 6xy}{3x}$

5. Divide.

a) $\frac{15x^2 - 20x}{5x}$

b) $\frac{16m^2 + 20mn}{4m}$

c) $\frac{18k^2 - 9k}{9k}$

d) $\frac{12m + 18mn}{-6m}$

e) $\frac{1.4d^2 + 1.8dk - 1.6d}{2d}$

f) $\frac{9c^2 - 12c + 6}{-3}$

6. You are decorating the bulletin board in your classroom with pictures of your classmates. Each picture covers an area of $4x$ cm^2. The area of the board is $4x^2 + 16x$ cm^2. Write an expression to represent how many pictures are required to cover the board.

7. A rectangular lawn has a width of $3x$ m. The area is $15x^2 + 45x$ m^2. You wish to put a fence around the lawn.

a) What is an expression to represent the perimeter of the lawn?

b) You are placing a post every 2 m. Find an expression to represent how many posts will be required.

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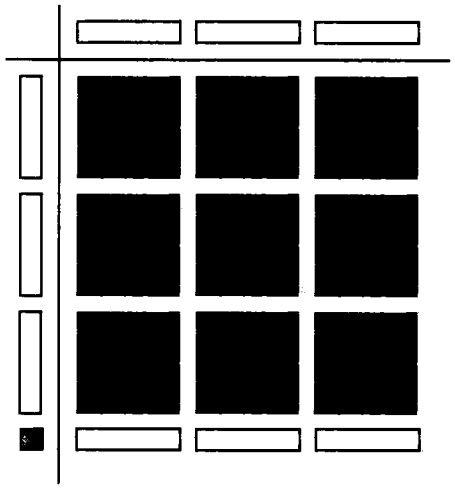
C3 Extra Practice 3 (#1-7).

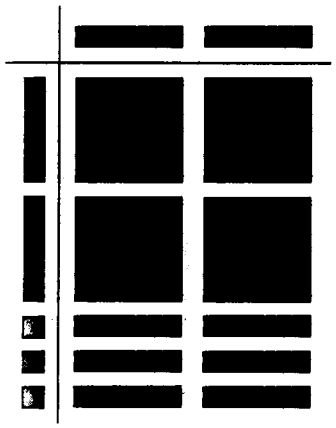
Extra Practice Answers

1. a) $\frac{4xy + 2x}{2x}$ **b)** $\frac{6x^2 - 6x}{3x}$

2. a) $-3x + 1$

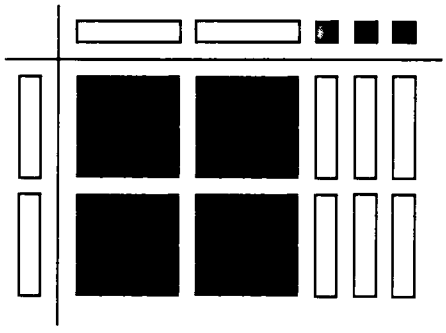


b) $2x + 3$



3. a) $\frac{6x^2 - 3x}{3x} = 2x - 1$ **b)** $\frac{4xy - 6x}{2x} = 2y - 3$

4. a) $-2x + 3$



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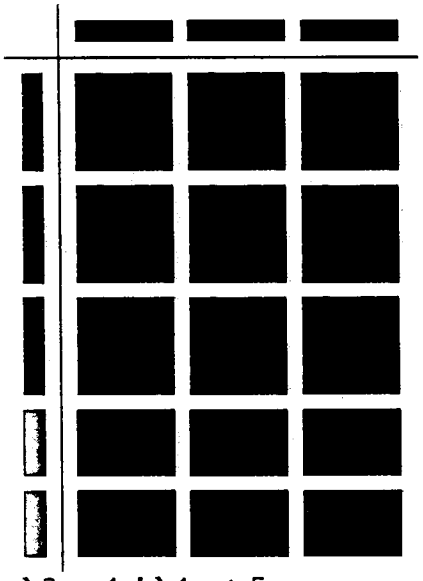
b) $3x + 2y$



5. a) $3x - 4$ **b)** $4m + 5n$
c) $2k - 1$ **d)** $-2 - 3n$
e) $0.7d + 0.9k - 0.8$ **f)** $-3c^2 + 4c - 2$

6. You will require $(x + 4)$ pictures to cover the bulletin board.

7. a) Length $= \frac{15x^2 + 45x}{3x} = (5x + 15)$ m

Perimeter $= 2(3x) + 2(5x + 15) =$
$6x + 10x + 30 = 16x + 30.$
The perimeter is represented by $(16x + 30)$ m.

b) $\frac{16x + 30}{2} = 8x + 15$

You will require $(8x + 15)$ posts.