Chapter 7 BLM Answers

BLM 7–1 Chapter 7 Math Link Introduction
1. Area = $(3.14)(4.5)^2 = (3.14)(20.25) =$
63.585 m^2
2. Volume = 63.585 × 0.5 = 31.7925 m^3
3. The units to measure area are square metres
and the units to measure volume are cubic
metres.
4. a) The diagram should show a square with the
side lengths labelled 9 m.
b) Area of house = 9 × 9 = 81 m^2
c) Area of property = 36 × 27 = 972 m^2
d) $\frac{81}{972} = \frac{1}{12}$
5. a) The diagram should be similar to the pool in
the student resource, with all the labels from the
student resource included. A line should divide
the pool into a square and a trapezoid.
b) Area of square = 4 × 4 = 16 m^2
c) The diagram should show the trapezoid
divided into a square and two triangles. The
length of the rectangle should be labelled 2.3 m.
The base of each triangle should be labelled 1 m.
d) Area of rectangle = 2 × 2.3 = 4.6 m^2
e) Area of triangle = 1 × 2.3 ÷ 2 = 1.15 m^2
f) Total area of pool = 16 + 4.6 + 1.15 + 1.15 =
22.9 m^2
g) 22.9 × 1.7 = 38.93 m^3
h) Example: Multiply the total area of the pool by
the depth of 1.7 m.
6. a) 18 × 48 = 864 paving stones
b) Example: No, the number of paving stones
does not have to be exactly 864 because some
will need to be cut to fit the shape of the patio.
Also, some paving stones may get broken. Extra
paving stones will likely be needed.
7. a) 81 + 22.9 + 25.5 + 18 + 63.585 =
210.985 m^2 **b)** 972 – 210.985 = 761.015 m^2
Example: Take the total area of the property and
subtract the combined area of the house, pool,
driveway, patio, and garden.

BLM 7–2 Chapter 7 Get Ready
1. a) trinomial, degree 2 **b)** binomial, degree 2
c) binomial, degree 1 **d)** monomial, degree 2
2. Examples: $3x^2 + 2y - 4x$, $3x + 2xy - 4y$
3. b) and d)
4. a) $3x^2 - 6x + 5$ **b)** $3p^2 - p + 2$ **c)** $2g^2 - 4n$
d) $-s^2 + 9s + 20$
5. a) $7x - 10$ **b)** $-8z^2 - 3z + 2$ **c)** $12m$
d) $2t^2 + 3t + 1$
6. a) -7 **b)** $y^2 + 5y - 2$ **c)** $-2b - 1$
d) $-3r^2 - 3r - 3$
7. a) $3x^2 + 8x - 10$ **b)** $-y - 9$ **c)** $3r^2 + 10r + 7$
d) $-9s^2 + 2s - 4$

BLM 7–3 Chapter 7 Warm-Up
Section 7.1
1. $y = 2x + 1$, where y is the number of lines and
x is the figure number.
$y = 2(100) + 1$. There would be 201 lines in the
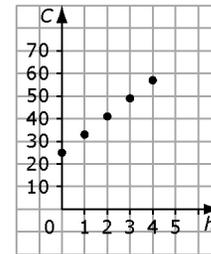hundredth figure.
2.

x	y
−4	11
−2	7
0	3
2	−1
3	−3

$y = -2x + 3$
3. Example: Approximately 3.3 kg
4.

$C = 8h + 25$, where C is how much you charge, in
dollars, and h is the number of hours
5. No. Example: The graph shows $y = 10x$.
6. 9 **7.** $-\frac{8}{3}$ **8.** 6 **9.** 3^7 **10.** 6^3

Section 7.2
1. $C = 20 + 0.58n$, where C is the total rental
charge and n is the number of kilometres
2. The graph should have a y-intercept of 6 and
increase from left to right.
3. Shaded tiles are positive, and white tiles are
negative.
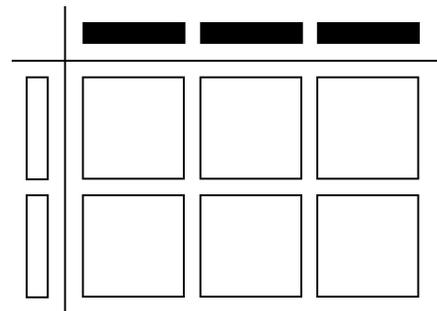
$-6x^2$

4. $-21xy$ **5.** $-4y$ **6.** $-\frac{10}{9}$ **7.** 8.4
8. $6x - 15$ **9.** $-2x - 10$ **10.** $4(2x + 3)$

Section 7.3
1. 3.15xy **2.** 9x **3.** $-x(-x - 3)$
4. $-6x^2 - 15xy + 6x$ **5.** $-2.1x^2 + 1.8x$
6. $3x + 4$ **7.** $-4x + 6y$ **8.** $-6y$ **9.** 6 **10.** $-0.8x$

BLM 7–4 Chapter 7 Problems of the Week
1. 40 x 9 + (h – 40) x 9 x 1.5, where h is the
number of hours Lucy works in a week.
360 + 13.5 (h – 40)
2. $\dfrac{\pi x^2}{\pi(2x)^2} = \dfrac{\pi x^2}{\pi 4x^2} = \dfrac{1}{4}$

3. a) 365 – 20(7) × n, where n is the number of
hens the farmer bought **b)** Examples: The
number of females usually born, the age range
during which a hen can lay eggs, the number of
chicks allowed to become hens, the number of
eggs started with, mortality rates.
4. Length = 2x, height = x, and width = w

$(2x)(x)(w) = 12x^2$, $w = \dfrac{12x^2}{2x^2}$, $w = 6$

There are six possible answers:
Example 1:
Length of cargo hold = 25 × 2x = 50x
Width of cargo hold = 10 × 6 = 60
Height of cargo hold = 4 × x = 4x
Example 2:
Length of cargo hold = 10 × 2x = 20x
Width of cargo hold = 25 × 6 = 150
Height of cargo hold = 4 × x = 4x
Example 3:
Length of cargo hold = 10 × 2x = 20x
Width of cargo hold = 4 × 6 = 24
Height of cargo hold = 25 × x = 25x
Example 4: Length of cargo hold= 4 × 2x = 8x
Width of cargo hold = 10 × 6 = 60
Height of cargo hold = 25 × x = 25x
Example 5: Length of cargo hold = 4 × 2x = 80x
Width of cargo hold = 25 × 6 = 150
Height of cargo hold = 10 × x = 10x
Example 6:
Length of cargo hold = 25 × 2x = 50x
Width of cargo hold = 4 × 6 = 24
Height of cargo hold = 10 × x = 10x
Check:
Volume of cargo hold =
(10)(25)(4) × 12x^2 = 12 000 x^2
Example 1: (50x)(60)(4x) = 12 000 x^2
Example 2: (20x)(150)(4x) = 12 000 x^2
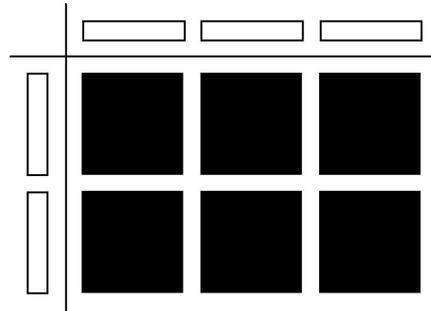Example 3: (20x)(24)(25x) = 12 000 x^2
Example 4: (8x)(60)(25x) = 12 000 x^2
Example 5: (80x)(150)(10x) = 12 000 x^2
Example 6: (50x)(24)(10x) = 12 000 x^2

BLM 7–5 Section 7.1 Extra Practice
1. a) $(2x)(-2x) = -4x^2$ **b)** $(2y)(3x) = 6xy$
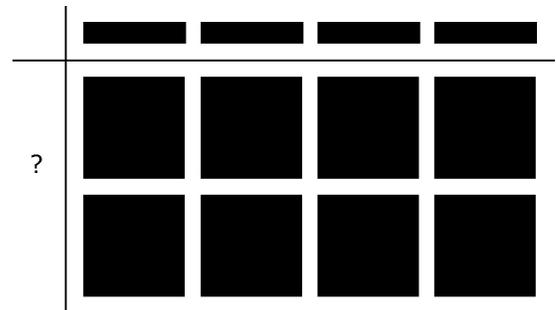**2.** Shaded tiles are positive, and white tiles are
negative.
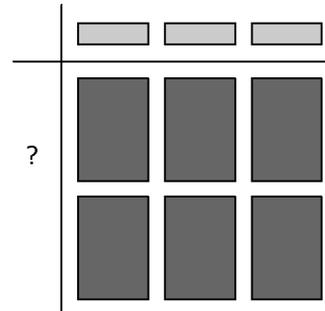**a)** Example: $6x^2$

b) Example: $4x^2$

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

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

5. a) Example: 2x

b) Example: 2x

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 $= \dfrac{36x}{9} = 4x$ m

Diameter of circle $= 4x$ m, radius $= 2x$ m
Area of circle $= \pi(2x)^2 = \pi4x^2$ m^2

BLM 7–6 Section 7.1 Math Link
1. a) $A = l \times w$
b) Example: Depth $= 0.1$ m
$V = (l \times w)0.1 = l \times 0.1w$
c) Example: Coefficient: 0.1. The depth of dirt is
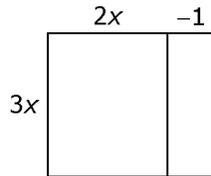0.1 m.
2. a) $A = \pi r^2$
b) Example: Depth $= 0.2$m; $V= \pi r^2 \times 0.2 = 0.2$
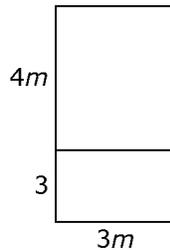πr^2
c) Coefficient: 0.2. The depth of water is 0.2 m.

BLM 7-7 Section 7.2 Extra Practice

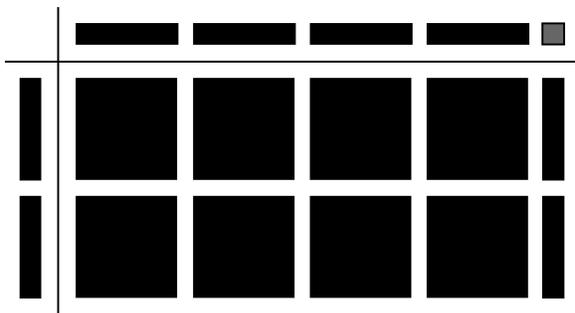**1. a)** $(4x)(3x + 5)$ **b)** $(2.1m + 7)(5m)$
2. a) $6x^2 – 3x$

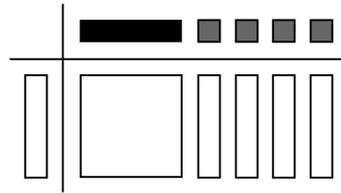**b)** $12d^2+9d$

3. a) $(x)(2x + 3) = 2x^2 + 3x$
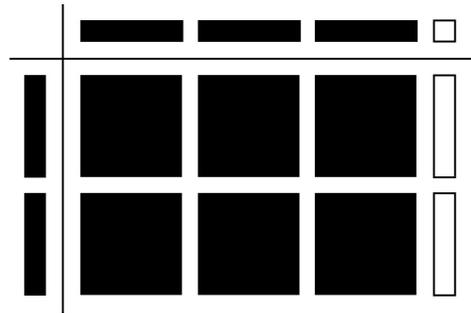**b)** $(-2x)(2x – 3) = -4x^2 + 6x$
4. a) $8x^2 + 2x$

b) $-x^2 – 4x$

c) $6x^2 - 2x$

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

BLM 7-8 Section 7.2 Math Link
1. a) $2w + 2$ **b)** w
2. $A = w(2w + 2) = 2w^2 + 2w$
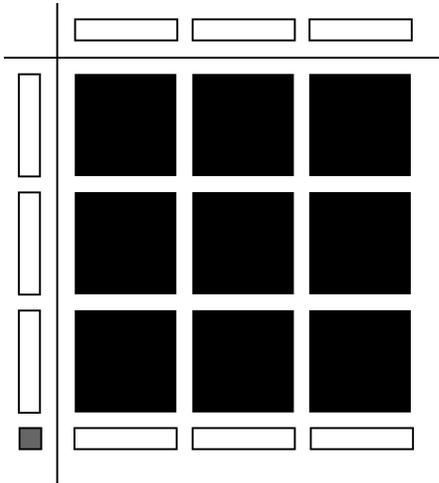**3.** Example: Depth $= 0.8$ m
$V = 0.8(2w^2 + 2w) = 1.6w^2 + 1.6w$
4.

Width (m)	Length (m)	Area (m^2)	Depth (m)	Volume (m^3)
2	6	12	0.8	12 × 0.8 = 9.6
3	8	24	0.8	24 × 0.8 = 19.2
4	10	40	0.8	40 × 0.8 = 32
5	12	60	0.8	60 × 0.8 = 48

BLM 7–9 Section 7.3 Extra Practice

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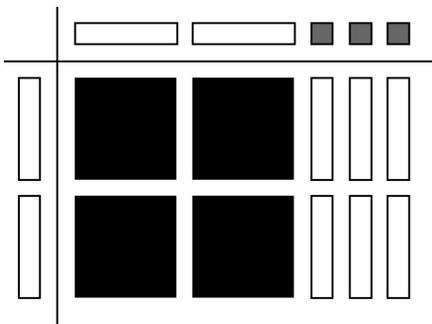
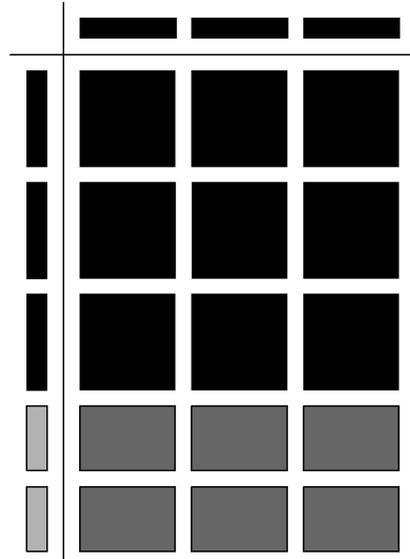**2. a)** $-3x + 1$

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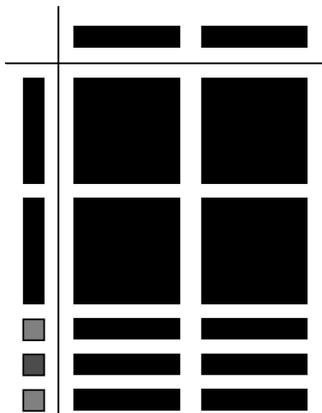
3. a) $\dfrac{6x^2 - 3x}{3x} = 2x - 1$ **b)** $\dfrac{4xy - 6x}{2x} = 2y - 3$

4. a) $-2x + 3$

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 $= \dfrac{15x^2 + 45x}{3x} = (5x + 15)$ m

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

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

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

BLM 7–10 Section 7.3 Math Link

1. Examples: Parking Lot A: Diagram of 20 m by 25 m parking lot. Parking Lot B: Diagram of 18 m by 15 m parking lot. Dimensions should be labelled.
2. Examples: Parking Lot A: $20 \times 25 = 500$ m^2, Parking Lot B: $18 \times 15 = 270$ m^2
3. a) $x(x + 4) \times 1 = x^2 + 4x$

b) 0.05 m **c)** $\dfrac{x^2 + 4x}{0.05} = 20x^2 + 80x$

4. a)

Truck Width, x (m)	Length, $x + 4$ (m)	Depth (m)	Volume of One Truckload (m^3)
1.5	1.5 + 4 = 5.5	1	1.5 × 5.5 × 1 = 8.25
2	2 + 4 = 6	1	2 × 6 × 1 = 12
3	3 + 4 = 7	1	3 × 7 × 1 = 21

Volume for Each Truck Size

b) Example:

	Area (m²)	Depth (m)	Volume (m³)
Parking Lot A	500	0.05	25
Parking Lot B	270	0.05	13.5

c) Example:

Volume of One Truckload (m³)	Volume Needed for Parking Lot A (m³)	Number of Truckloads to Cover Parking Lot A	Volume Needed for Parking Lot B (m³)	Number of Truckloads to Cover Parking Lot B
8.25	25	25 ÷ 8.25 ≈ 3.03 ≈ 4	13.5	13.5 ÷ 8.25 ≈ 1.6 ≈ 2
12	25	25 ÷ 12 ≈ 2.08 ≈ 3	13.5	13.5 ÷ 12 ≈ 1.1 ≈ 2
21	25	25 ÷ 21 ≈ 1.2 ≈ 2	13.5	13.5 ÷ 12 ≈ 0.6 ≈ 1

5. Examples: Parking Lot A: The truck with a width of 3 m because it will have to make only one trip and it will have the least amount of extra gravel. Parking Lot B: The truck with a width of 1.5 m because it will have the least amount of extra gravel and it is smaller so it may be more fuel efficient.

BLM 7–11 Chapter 7 Test
1. A **2.** D **3.** B **4.** D
5. $-18.87xy$ **6.** $2.5x$ **7.** $4x^2 - 30x$
8. a) $15x^2$ **b)** $8xy - 10y$
9. a) $9x$ **b)** $-8 + 2x$
10. Model should show $-4x^2 + 2x$.
11. a) Step 2
b) $(5)(7)(x)(x) + (5)(-2)(x) = 35x^2 - 10x$
12. $4x + 1$
13. a) $8x^2 + 28x$ **b)** $24x^2 + 84x$ **c)** $2x + 7$

BLM 7–12 Chapter 7 Math Link: Wrap It Up!
Example of play area:
1. circle **2.** Radius = 7 m **3.** 30 cm = 0.3 m
4. Diagram should have all dimensions labelled.
5. Base area = $\pi(7)^2 \approx 153.86$ m²
6. Volume $\approx 153.86 \times 0.3 \approx 46.16$ m³
7. a) radius = r **b)** Area = πr^2
c) Volume = $\pi r^2 \times 0.3 \approx 0.94r^2$
Example of swimming pool:
1. parallelogram **2.** Base = 18 m; height = 6 m
3. 1.5 m **4.** Diagram should have all dimensions labelled. **5.** Base area = $18 \times 6 = 108$ m²
6. Volume $108 \times 1.5 \approx 162$ m³
7. a) height = h **b)** Area = $18h$
c) Volume = $18h \times 1.5 = 27h$

BLM 7–13 Sample Polynomial Puzzle