BLM Answers

BLM 6-1 Prerequisite Skills

1. a) octagon **b)** equilateral triangle
c) square **d)** parallelogram

2. a) triangular prism **b)** cube
c) triangular-based pyramid

3. a) perimeter: 104 m; area: 480 m^2
b) perimeter: 96 cm; area: 448 cm^2
c) circumference: 157 m; area: 1962.5 m^2
d) perimeter: 200 m; area: 2500 m^2

4. 201.6 m^2

5. 168 000 L

6.

Regular Polygon	Sum of Interior Angles	Measure of Each Interior Angle
equilateral triangle	180°	60°
square	360°	90°
regular pentagon	540°	108°
regular hexagon	720°	120°
regular heptagon	900°	128.6°
regular octagon	1080°	135°

8. a) 3 m by 5 m **b)** 5.5 m by 5.5 m

BLM 6-3 Section 6.1 Investigate Geometric Shapes and Figures

1. a) 1:1.618. The golden ratio is pleasing to the eye, so designers use this ratio in make their designs more beautiful.
b) a rectangle with a ratio of length to width of 1.618:1

2. 13 in.

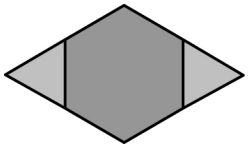
3.–5. Answers may vary

6. Some of the ratios are close to the golden ratio.

7. Answers may vary. Sample answer: triangle, rectangle, trapezoid, regular hexagon

8. Answers may vary. Sample answers:

a)



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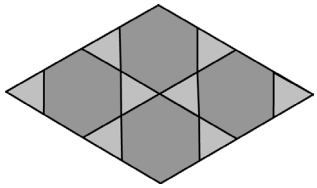


9. a) 1.618 units **b)** 2.618 units **c)** 1.618:1
d) The width of each larger square is the sum of the widths of the previous two squares.

BLM 6-7 Section 6.2 Perspective and Orthographic Drawings

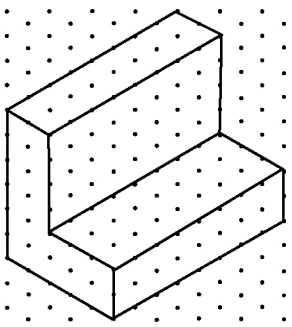
1. A scale model. It would show the most realistic view of the condominium complex.

2. Blueprints. They would show all measurements needed for the construction

3. A

4. No. The height of the front is not the same as the height of the back.

5. a)



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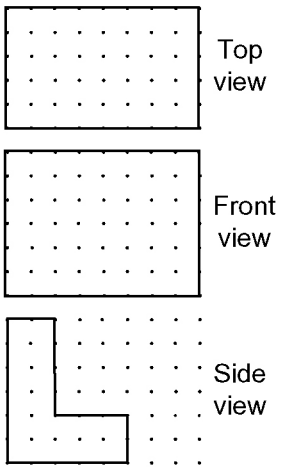
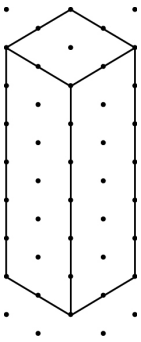


6. a)



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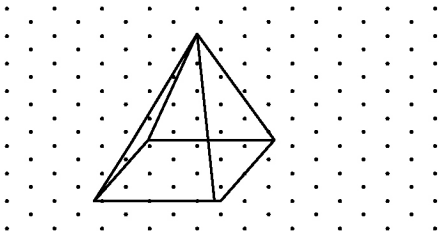

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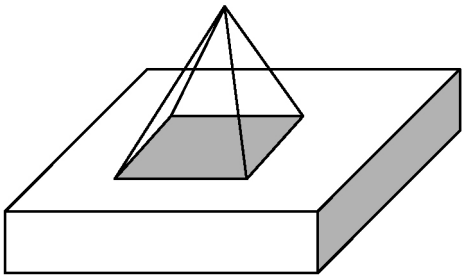
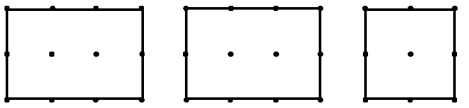


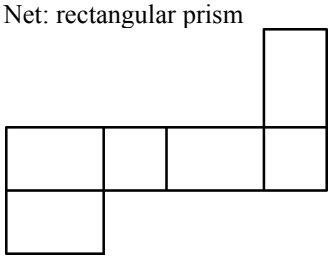
8.



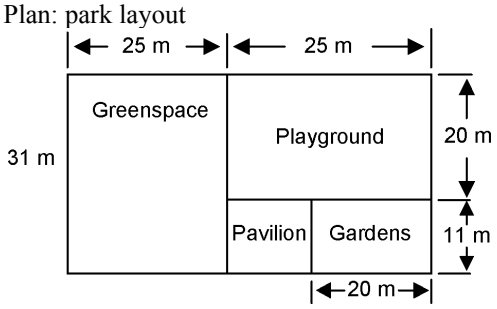
BLM 6-8 Section 6.3 Create Nets, Plans, and Patterns

1. A net is a two-dimensional representation of an object that can be cut out and folded to form the object. A plan is a scale drawing of a three-dimensional object. A pattern is a form or model from which a three-dimensional object can be created.

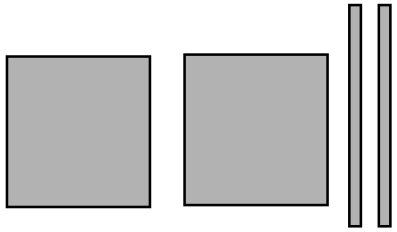
2. Answers may vary. Sample answers:
Net: rectangular prism



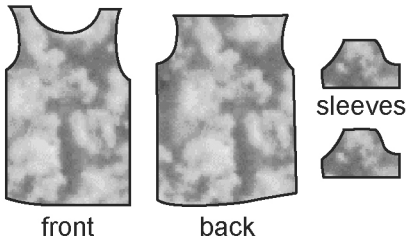
Plan: park layout



Pattern: tote bag

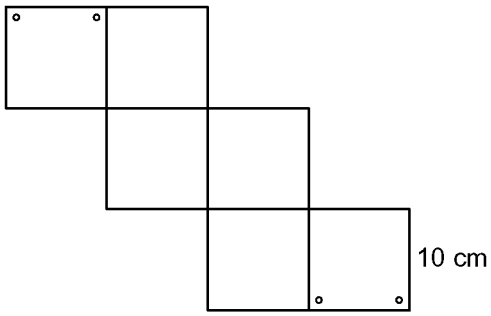


3. Answers may vary. Sample answer:



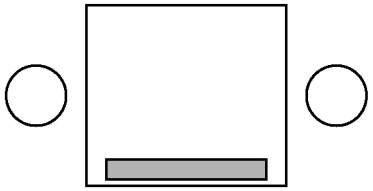
4. Answers may vary. Sample answers:

5.

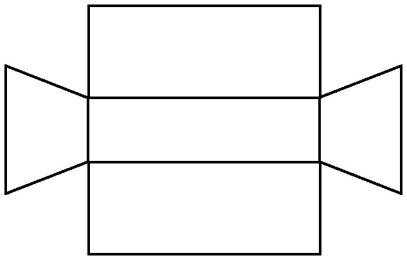


6. Net B; none of the squares would overlap when folded.

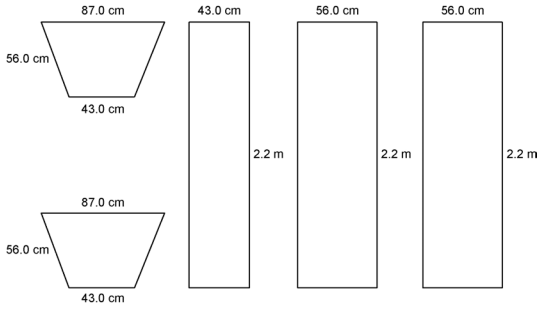
7.



8. a)

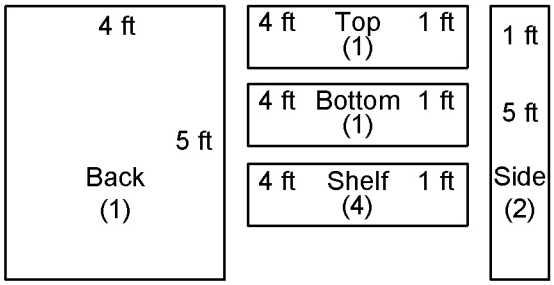


b)



BLM 6-13 Section 6.4 Scale Models

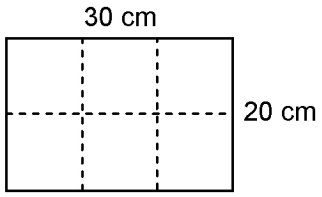
1. a) height: 40 cm; side of base: 4 cm
b) Models may vary.
2. Scale models make it easy to visualize and compare the stadiums.
3. $l = 36$ cm, $w = 30$ cm, $h = 8$ cm
4. a) 12 ft by 18 ft **b)** 12 ft by 15 ft
c) 15 ft by 15 ft **d)** 21 ft by 24 ft
5.



BLM 6-15 Section 6.5 Solve Problems With Given Constraints

1. a) 1.4 m by 1.4 m by 1.4 m **b)** 2.7 m^3
2. a) $r = 5.64$ cm, $h = 12.28$ cm **b)** 1126.7 cm^3
3. a) rectangle: 600 $in.^2$; round: 615 $in.^2$
b) rectangle: 20 in. by 30 in.; round: 28 in. by 28 in.
c) rectangle: 1500 $in.^2$; round: 1868 $in.^2$
4. a) 1121 m **b)** 1585 m
c) The volume of a cylinder increases rapidly as its circumference increases, so the circumference does not need to double for the cylinder to contain twice as much oil.
5. a) 30 cm by 30 cm by 30 cm **b)** $25.79

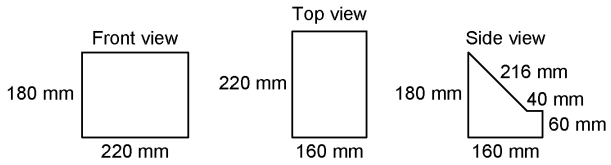
6. a) 4 ft. All the windows can be covered with this width and there will be less waste than with the 5-ft width.
b) two 8-ft lengths, three 6-ft lengths, one 4-ft length
7. a)



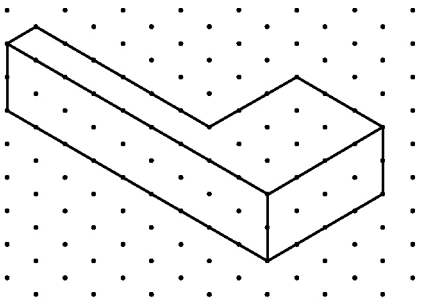
b) 1000 cm^3

BLM 6-17 Chapter 6 Review

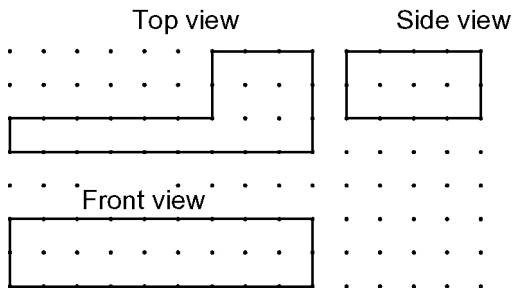
1. A, C
2.



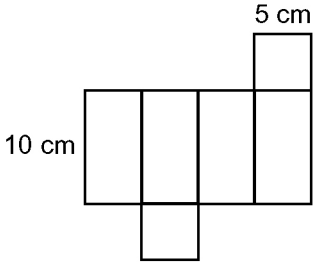
3. b)



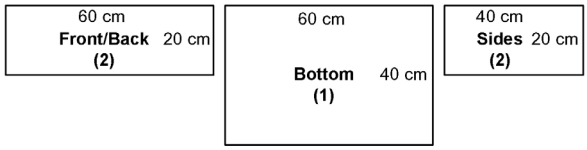
c)



4. Answers may vary.



5. Answers may vary.



6.–8. Answers may vary.

7. The company would want to minimize the amount they spend on packaging for a package of a given volume.

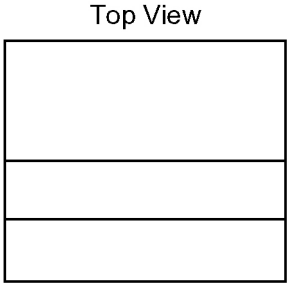
8. a) 12.4 m **b)** 14.5 m

BLM 6-18 Chapter 6 Practice Test

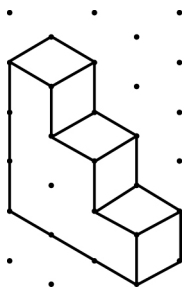
1. a) F **b)** T **c)** F **d)** T **e)** T

2. square-based pyramid

3.



4.



5. a) 1 in represents 3 ft **b)** 9 ft by 15 ft

6. Answers may vary.

7. a) Answers may vary.

b) sphere: $r = 12.62$ cm; square-based prism: $s = 18.26$ cm; cylinder: $r = 10.3$ cm, $h = 20.6$ cm

c) sphere: 8410.4 cm^3; square-based prism: 6085.8 cm^3; cylinder: 6867.1 cm^3

BLM 6-19 Chapter 6 Test

1. C

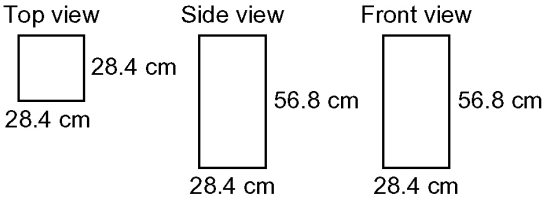
2. A

3. D

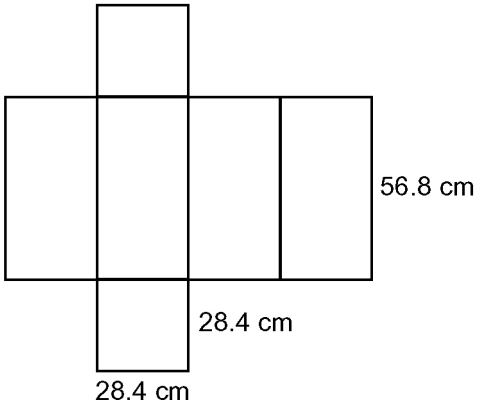
4. B

5. Answers may vary. Sample answers:

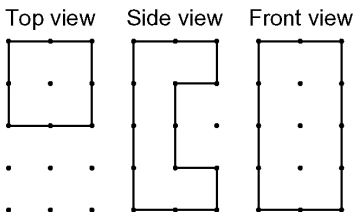
a)



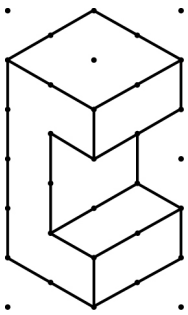
b)



6.



7.



8. 6.5 cm

9. $V = 256$ $in.^3$; S.A. = 256 $in.^2$

10. a) $r = 2.0$ m; $h = 3.9$ m **b)** 49 008.8 L