Chapter 3 BLM Answers

BLM 3−3 Chapter 3 Warm-Up
Section 3.1
1. 30 in.
2. 79 in.
3. $0.15
4. 3 L
5. $97.19
Section 3.2
1. 32 ft^2
2. 432 in.^{2}
3. 45 ft^2
4. 108 in.^{2}
5. 78.5 in.^{2}
Section 3.3
1. 1200 cm^2
2. 60 000 cm^2
3. 0.1 m^2
4. 314 cm^2
5. 153.94 cm^2
Section 3.4
1. 86.1 cm^2
2. 56 in.^{2}
3. 52 ft^2
4. 30 in.^{2}
5. 4 times as large

BLM 3−4 Section 3.1 Extra Practice
1. a) Look for a reasonable estimate. Example:
length about $2\frac{1}{2}$ in. and width about 2 in.
b) *l* = 2.5 in., *w* = 2 in., *A* = 5 in.^{2}
2. a) 144 **b)** 72 **c)** 288
d) 9 **e)** $4\frac{1}{2}$ **f)** 18
3. a) in. **b)** in. **c)** ft
d) in. **e)** in. **f)** ft
4. a) about 20 square units
b) about 80 square units
5. a) 49 in.^{2} **b)** about 40 in.^{2}
6. For #4, *A* = 78.5 in.^{2}
For #5, *A* = 38.5 in.^{2}

BLM 3−5 Section 3.2 Extra Practice
1. a) Look for a reasonable estimate. Example:
length about 4.5 cm and width about 3.5 cm
b) 20 cm^2
2. a) 30 000 **b)** 3000 **c)** 300
d) 1200 cm; 0.12 **e)** 3200 cm; 0.32
f) 1600 cm; 0.16
3. a) cm **b)** m **c)** cm
d) m **e)** cm **f)** m
4. a) 36 cm^2
b) Look for a reasonable estimate.
Example: 26 cm^2
c) 28 cm^2
5. 707 cm^2

BLM 3−6 Section 3.3 Extra Practice
1. a) 47 m^2 **b)** 74 ft^2
2. 64 cm^2
3. 224 tiles
4. a) 24 cm^2 **b)** 48 cm^2 **c)** 2
d) 48 cm^2 **e)** equal area **f)** 4 times larger

BLM 3−9 Explore the Surface Area of a Cone
1. 19.63 in.^{2}
3−4. Answers will vary according to how large a cone students make.
• The circle at the base of the cone will also be smaller than 5 in. and therefore have an area less than 19.63 in.^{2}.
• The area of the top of the cone will always be less than 19.63 in.^{2} because the circle is manipulated so that parts of it overlap in order to make the cone.
5. Look for the following points:
• Students may say that the area of the circle at the base of the cone is not part of its surface area. Discuss that this is true if the cone is open, but not if the cone is a solid object. You may wish to show students a solid cone.
• The surface area of the top of the cone is always smaller than the area of the circle used to make the cone.
• The areas of the circle at the base and the top of the cone are added together to determine the total surface area of the cone.
6. a) The diameter of the base of the cone will directly affect its surface area. The larger the diameter of the base, the greater the surface area of that part of the cone.
b) The slant height also affects the surface area of the cone. The greater the length of the slant height, the greater the surface area of the lateral area of the cone.

BLM 3−10 Calculate the Surface Area of a Cone
Your Turn
7.85 m^2

BLM 3−11 Work With the Surface Area of a Cone
1. a) 283 cm^2 **b)** 2269 cm^2 **c)** 276 cm^2
2. 502.65 cm^2
3. The cylinder will have the greater surface area because:
• it has a circle at the top and the bottom
• the related cone includes the surface of *either* the top or the bottom of the cylinder, not both
• the related cone has a slant height greater than the height of the cylinder, but not likely large enough to make up for the full area of the top of the cylinder
4. 4065.2 cm^2 − 650.9 cm^2 = 3414.3 cm^2
5. 565.5 ft^2

BLM 3–12 Section 3.4 Extra Practice
1. a) 157 in.^{2} **b)** 7.6 m^2
2. a) 4   **b)** 3096 in.^{2}

c) $1\frac{1}{2}$ ft by $2\frac{1}{2}$ ft by $3\frac{1}{2}$ ft   **d)** $21\frac{1}{2}$ ft^2

3. a) 5 cm by 4.5 cm by 4 cm
b) 121 cm^2 **c)** 900 cm^2 **d)** about 7 times
4. a) 302 ft^2 **b)** 848 m^2
5. 550 cm^2

BLM 3–13 Chapter 3 Test
1. C
2. C
3. B
4. A
5. D
6. D
7. 616 in.^{2}
8. a) The sketch should show a cylinder with diameter 2.4 m and height 10 m.
b) 84.4 m^2
9. a) $980   **b)** $148.75   **c)** $125   **d)** $1253.75