

- b) "In the summer, people like to swim to cool down. What is your favourite summer activity?"
- 2.a) The data show the average weekly earnings in 2001, for various jobs.
- c) For example: A bar graph is easy to read, and we can compare earnings for different jobs. A circle graph could not be used because we're not looking at percents or parts of a whole. A line graph could not be used because the data are not measured over time.
- d) Mining; Health Care; these jobs are represented by the tallest and shortest bars.
- e) For example: Multiply the data by 52 to get average annual earnings. Then, divide the average annual earnings by 12 to get average monthly earnings.
- f) For example: Mean.
- 3.a) 17; 10; 9; 4; 20      b) 60
- c) Metro PD, because it is the least favourite.
- d) Reality Shock, because it has the most viewers.
- 4.b) For example: The median and the mode. The boxes with the greatest and least mass, and the range of the data.
- c) For example: No, the shipment will not be approved if the mean is used, since the mean mass of a box of raisins is less than 100 g.
- d) 99.9 g      e) 100.3 g
- f) Yes; the mode is higher than 100 g.  
No; the median is less than 100 g.
- 5.b) For example: Calgary: Upward trend from February to June, downward trend from June to November.  
Charlottetown: Downward trend from January to April, and from May to July; upward trend from July to November.
- c) No. Charlottetown gets more rain than Calgary year round; the 2 cities never get the same amount of rain in a given month.
- d) Calgary: 40 cm; Charlottetown: 106 cm
- e) Calgary: 2.05 cm; Charlottetown: 8.6 cm
- f) For example: Charlottetown gets the most rain in November and the least rain in July. Calgary gets the most rain in June and the least rain in February.
- 6.a) Mode; the storeowner needs to know which size sweater sells the most.
- b) Mean; this is the highest of the 3 values, and will get Robbie the most money.
- c) Median; if Tina's score is greater than the median, she is in the top half of her class.
- 7.a) Mean      b) Mode

### Unit 5 Practice Test, page 211

- 1.a) For example: Primary data are data I collect.  
Secondary data come from another source.
- b) i) Secondary data      ii) Primary data
- 2.b) 1:30, or 90 s      c) 2:54.5, or 2 min 54.5 s
- d) Yes; 2:39, 2:47, 3:07, 3:11, 3:25
- 3.a) 94      b) 86      c) 85
- 4.a) For example: I used a bar graph because the data are not measured over time.
- b) For example: The scale would change to allow for the greater number. Another bar would be added to the graph.
- d) For example: The graph from part a, because it is easier to read.

### Unit 6 Measuring Perimeter and Area, page 214

#### Skills You'll Need, page 216

- 1.a)  $P = 30$  cm,  $A = 36$  cm<sup>2</sup>
- b)  $P = 26$  m,  $A = 40$  m<sup>2</sup>
- c)  $P = 18$  cm,  $A = 20.25$  cm<sup>2</sup>
- d)  $P = 8.4$  cm,  $A = 3.6$  cm<sup>2</sup>

#### 6.1 Area of a Parallelogram, page 219

- 1.a)  $b = 12$  cm,  $h = 4$  cm      b)  $b = 10$  cm,  $h = 12$  cm
- c)  $b = 8.0$  cm,  $h = 4.4$  cm      d)  $b = 4.0$  cm,  $h = 8.8$  cm
- 2.a) 48 cm<sup>2</sup>      b) 120 cm<sup>2</sup>      c) 35.2 cm<sup>2</sup>      d) 35.2 cm<sup>2</sup>
- 3.b) i) 15 cm<sup>2</sup>      ii) 24.5 cm<sup>2</sup>
- The areas are the same, but the parallelograms have different shapes.
- 5.a) 24 cm<sup>2</sup>      b) 12 cm      c) 8 cm
- d) For example: 1 cm by 48 cm, 2 cm by 24 cm, 3 cm by 16 cm, 4 cm by 12 cm, 6 cm by 8 cm, 8 cm by 6 cm, 12 cm by 4 cm, 16 cm by 3 cm, 24 cm by 2 cm, 48 cm by 1 cm
- 6.a) 5 cm      b) 14 cm      c) 7 cm
- 7.a) For example: 8      b) For example: 12
- c) For example: 4
8. No. For example: The area of A is equal to the area of B.
- 9.a) The two triangles are congruent.
- b) 60 cm<sup>2</sup>
- c) 30 cm<sup>2</sup>; the area of each triangle is one-half the area of the parallelogram.
- 10.a) 95.04 m<sup>2</sup>      b) 132 m<sup>2</sup>
- c) For example: Subtract the area of the patio from the sum of the areas of the patio and gardens.  
Area of the gardens = 36.96 m<sup>2</sup>

## 6.2 Area of a Triangle, page 222

- 1.a)  $b = 7$  m,  $h = 3$  m      b)  $b = 3$  cm,  $h = 5$  cm  
c)  $b = 6$  m,  $h = 8$  m      d)  $b = 4$  cm,  $h = 7$  cm  
2.a)  $10.5$  m<sup>2</sup>    b)  $7.5$  cm<sup>2</sup>    c)  $24$  m<sup>2</sup>    d)  $14$  cm<sup>2</sup>  
3.b) i)  $6$  cm<sup>2</sup>      ii)  $24.375$  cm<sup>2</sup>

The areas are the same for the 3 different triangles in parts i and ii.

- 5.b) i) For example: By doubling the height or the base, the area of the triangle doubles.  
ii) For example: By halving the height or the base, the area of the triangle is halved.  
6.b)  $12$  cm<sup>2</sup>

For example: All the triangles have different side lengths.

- 7.a)  $10$  cm      b)  $8$  cm      c)  $3$  cm  
8. For example: I double the area, then divide by the base.  
9.a)  $8.55$  m<sup>2</sup>      b)  $2$  cans  
10.a)  $92.98$  m<sup>2</sup>      b)  $33$  sheets;  $\$823.35$

## Unit 6 Mid-Unit Review, page 225

- 1.a)  $P = 15$  m,  $A = 12.5$  m<sup>2</sup>    b)  $P = 13.6$  m,  $A = 11.56$  m<sup>2</sup>  
2.a)  $7$  cm<sup>2</sup>      b)  $9.2$  cm<sup>2</sup>      c)  $3$  cm<sup>2</sup>  
3.a)  $2700$  cm<sup>2</sup>    b) For example:  $b = 60$  cm,  $h = 90$  cm  
c) For example:  $b = 30$  cm,  $h = 45$  cm  
4.a)  $12$  cm<sup>2</sup>      b)  $3.5$  cm<sup>2</sup>      c)  $2.2$  m<sup>2</sup>  
5.  $\$1265.63$ , or  $\$1375$  if the contractor rounds to the next square metre of concrete.

## 6.3 Area and Perimeter of a Trapezoid, page 228

- 1.a)  $15$  cm<sup>2</sup>      b)  $12$  cm<sup>2</sup>      c)  $16$  cm<sup>2</sup>  
2.a)  $65$  cm<sup>2</sup>      b)  $38$  cm<sup>2</sup>  
3.a)  $5$  cm<sup>2</sup>      b)  $A \div 58.6$  cm<sup>2</sup>  
4.a)  $A = 156$  cm<sup>2</sup>,  $P = 54$  cm    b)  $A = 816$  m<sup>2</sup>,  $P = 124$  m  
5.a) i)  $33.6$  cm<sup>2</sup>      ii)  $66$  m<sup>2</sup>  
b) i) No; there is not enough information.  
ii) Yes;  $P = 36$  m  
6.a) Flowers:  $A = 5.2$  m<sup>2</sup>; vegetables:  $A = 3.965$  m<sup>2</sup>; herbs:  $A = 2.535$  m<sup>2</sup>  
b)  $A = 11.7$  m<sup>2</sup>; find the sum of the three areas in part a, or find the area of the rectangle.  
8.a) For example: Divide the area of the parallelogram by 2 to find the area of each trapezoid.  
9.a)  $510$  cm<sup>2</sup>      d) Larger  
10. For example:  
Area of a trapezoid =  $\frac{1}{2}(\text{base } 1 + \text{base } 2) \times h$

## 6.4 Measuring Irregular Figures, page 236

1.  $24$  m<sup>2</sup>  
2.a)  $31$  m<sup>2</sup>      b)  $27$  m<sup>2</sup>

- 3.a) Answers vary.      b)  $A = 42.56$  m<sup>2</sup>,  $P = 37.6$  m  
4.b)  $A = 2200$  m<sup>2</sup>,  $P = 220$  m  
c) For example: Count the squares on the grid and multiply by 100 to get the area; count the sides of the squares and multiply by 10 to get the perimeter.  
5.b)  $135$  m<sup>2</sup>  
c) No. For example: The areas of the garden and the backyard never change, so you are always subtracting the same numbers.  
6.b) All the perimeters are the same;  $P = 26$  m  
c) For example: You cannot make an L-shaped pool with area  $30$  m<sup>2</sup> and arm width  $5$  m. You end up with a rectangle.

## Unit 6 Unit Review, page 240

- 1.a)  $6.8$  cm<sup>2</sup>    b)  $2.94$  cm<sup>2</sup>    c)  $3.125$  cm<sup>2</sup>    d)  $5.98$  cm<sup>2</sup>  
2.a)  $186$  cm<sup>2</sup>      b)  $1125$  cm<sup>2</sup>  
3.a)  $64$  cm      b)  $145$  cm  
4. For example: The height of the trapezoid is about  $10$  cm.  
5.a)  $P = 37.2$  cm,  $A = 52.28$  cm<sup>2</sup>  
b)  $P = 48$  m,  $A = 155.52$  m<sup>2</sup>  
6.a)  $1105.5$  m<sup>2</sup>      b)  $\$10\,756.50$

## Unit 6 Practice Test, page 241

- 1.a)  $A = 63$  cm<sup>2</sup>,  $P = 34$  cm    b)  $A = 9$  cm<sup>2</sup>,  $P = 25.5$  cm  
c)  $A = 8.1$  cm<sup>2</sup>,  $P = 13.9$  cm  
d)  $A = 27$  cm<sup>2</sup>,  $P = 26$  cm  
2.a) Area is doubled.      b) Area is halved.  
c) Area stays the same.  
4.a)  $25.5$  cm<sup>2</sup>      b)  $36$  cm

## Unit 7 Geometry, page 244

### Skills You'll Need, page 246

3. Yes.  
4. No. An equilateral triangle always has three equal angles of  $60^\circ$ . A right triangle has one angle of  $90^\circ$ .  
7.a) On the vertical axis      b) On the horizontal axis

### 7.1 Classifying Figures, page 252

- 1.a) For example: A polygon has sides that intersect only at the vertices. The sides of this figure don't only intersect at the vertices.  
b) For example: A polygon is a closed figure. This is not a closed figure.  
2.a) i) No. Not all the angles are equal.  
ii) Yes. All the sides and all the angles are equal.  
iii) No. Not all the sides are equal.  
b) i) All of the polygons in part a have line symmetry.