

## Facts to Know

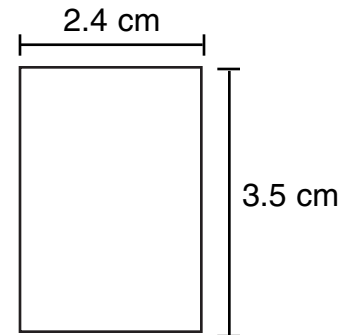
- Perimeter is the distance around all the edges of an object.
- The distance around a property such as a house, lot, or a schoolyard is the perimeter of the property.
- The following words usually indicate perimeter: border, walls, fence, edges, sides, or distance around.

## Perimeters of Rectangles

The perimeter of a rectangle can be computed by any of the following ways:

- adding up all four sides of the rectangle
- adding the length and width and multiplying by 2
- using the formula:  $P = (l + w) \times 2$  or  $P = 2(l + w)$   
(**Note:**  $P$  = perimeter,  $l$  = length, and  $w$  = width)

Compute the perimeter of this rectangle. The length is 3.5 centimeters and the width is 2.4 centimeters.



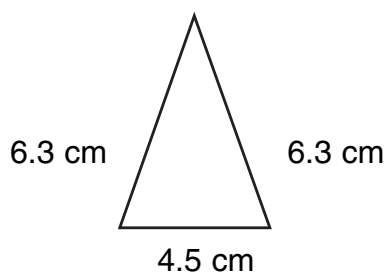
Add the 3.5 plus 2.4, which equals 5.9 centimeters.  
Multiply by 2 to get the other two sides of the rectangle.  
The total perimeter is 11.8 centimeters.

$$3.5 \text{ cm} + 2.4 \text{ cm} = 5.9 \text{ cm}$$

$$5.9 \text{ cm} \times 2 = 11.8 \text{ cm}$$

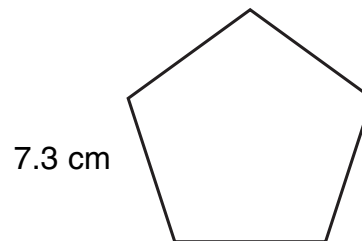
## Perimeters of Other Polygons

Add the sides of each polygon to compute the perimeter.



isosceles triangle

$$6.3 \text{ cm} + 6.3 \text{ cm} + 4.5 \text{ cm} = 17.1 \text{ cm}$$



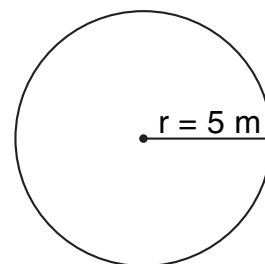
regular pentagon

$$7.3 \text{ cm} \times 5 = 36.5 \text{ cm}$$

## Circumference of a Circle

The formula for determining the circumference of a circle is  $2\pi r$  or  $\pi d$ . (To solve, multiply 2 times  $r$  (the radius) times  $\pi$  (equals to approximately 3.14) or multiply  $d$  (the diameter) times 3.14.

Multiply 5 times 2 times 3.14 or  
 $5 \times 2 \times 3.14 = 31.4 \text{ m}$ , so  $C = 31.4 \text{ meters}$



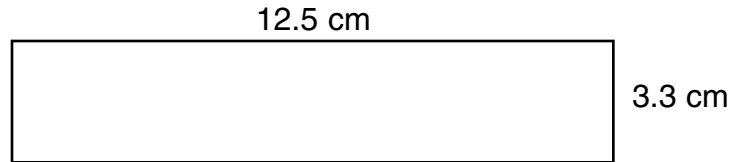
# Computing Perimeters of Rectangles

To compute the perimeter of a rectangle, add the length and the width and then multiply by 2.

$$12.5 \text{ cm} + 3.3 \text{ cm} = 15.8 \text{ cm}$$

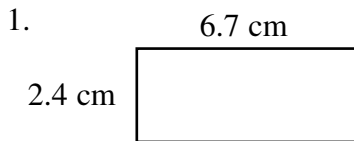
$$15.8 \text{ cm} \times 2 = 31.6 \text{ cm}$$

$$P = 31.6 \text{ cm}$$

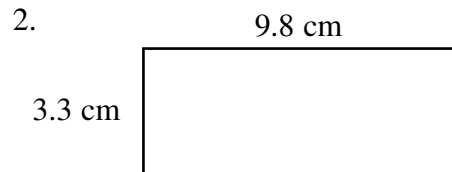


**Directions:** Use the information on page 9 to compute the perimeters of these rectangles.

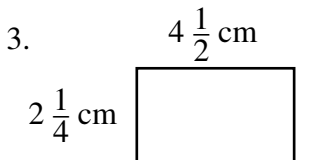
Remember to label the unit of measurement—inches, feet, yards, centimeters, meters—in your answers.



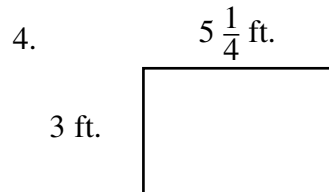
$$P = \underline{\hspace{2cm}}$$



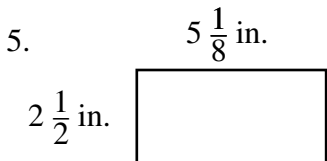
$$P = \underline{\hspace{2cm}}$$



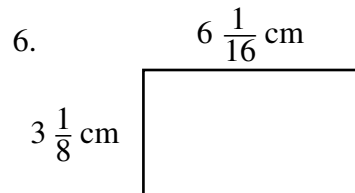
$$P = \underline{\hspace{2cm}}$$



$$P = \underline{\hspace{2cm}}$$



$$P = \underline{\hspace{2cm}}$$



$$P = \underline{\hspace{2cm}}$$

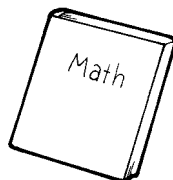
**Directions:** Use a ruler and the information on pages 5 and 9 to help you measure and compute the perimeters of these rectangles.

7. a math book cover

length \_\_\_\_\_

width \_\_\_\_\_

P = \_\_\_\_\_

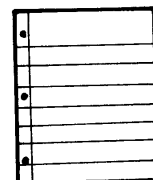


8. a sheet of paper

length \_\_\_\_\_

width \_\_\_\_\_

P = \_\_\_\_\_

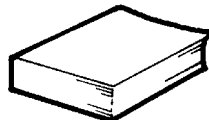


9. a paperback book cover

length \_\_\_\_\_

width \_\_\_\_\_

P = \_\_\_\_\_

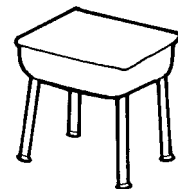


10. a desk

length \_\_\_\_\_

width \_\_\_\_\_

P = \_\_\_\_\_

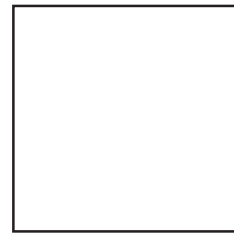


## Computing Perimeters of Regular Polygons

To compute the perimeter of a regular polygon, in which all sides are equal, multiply the length of one side by the number of sides.

**Directions:** Compute the perimeter of each of the regular polygons illustrated below. Remember to label the unit of measurement—inches, feet, yards, centimeters, meters—in your answer.

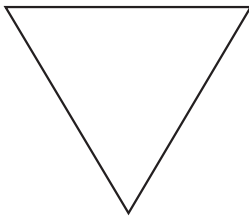
4.9 m



$$4.9 \text{ m} \times 4 = 19.6 \text{ m}$$

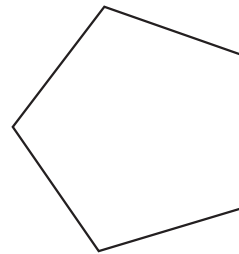
1.

5.2 cm



\_\_\_\_\_

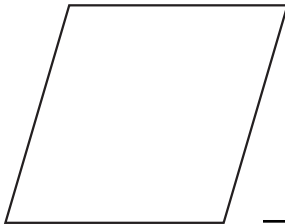
2.

 $2\frac{1}{4}$  in.

\_\_\_\_\_

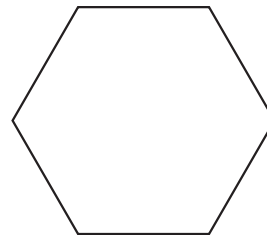
3.

6.1 m



\_\_\_\_\_

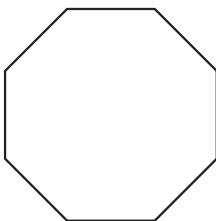
4.

 $3\frac{1}{8}$  ft.

\_\_\_\_\_

5.

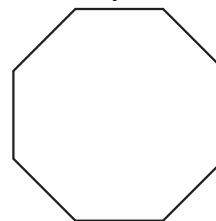
9.3 m



\_\_\_\_\_

6.

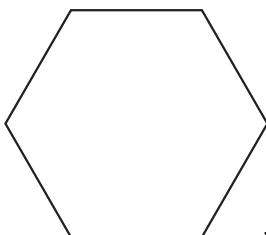
8 yd.



\_\_\_\_\_

7.

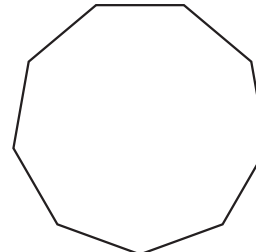
22.9 cm



\_\_\_\_\_

8.

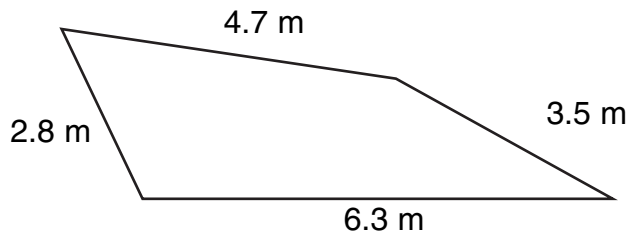
11.7 m



\_\_\_\_\_

# ..... Computing Perimeters of Irregular Polygons and Circumferences of Circles

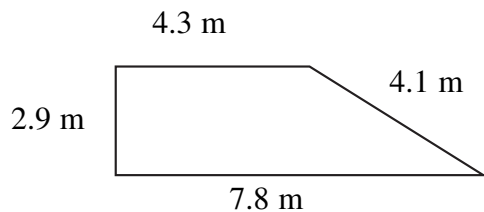
To compute the perimeter of an irregular polygon, add the lengths of the sides.



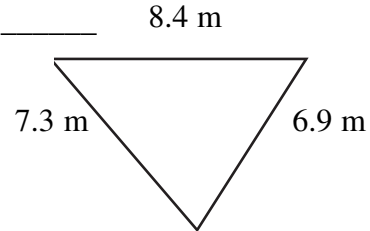
$$P = 4.7 \text{ m} + 3.5 \text{ m} + 6.3 \text{ m} + 2.8 \text{ m} = 17.3 \text{ m}$$

**Directions:** Use the information on pages 5 and 9 to help you compute the perimeters of these polygons. Remember to label the unit of measurement—inches, feet, yards, centimeters, meters—in your answer.

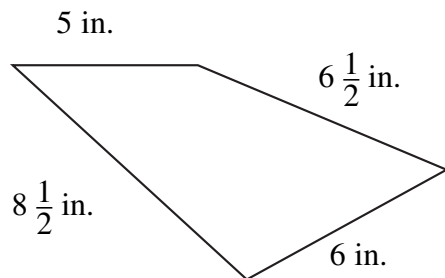
1.  $P = \underline{\hspace{2cm}}$



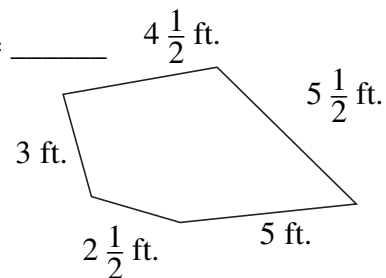
2.  $P = \underline{\hspace{2cm}}$



3.  $P = \underline{\hspace{2cm}}$

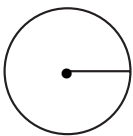


4.  $P = \underline{\hspace{2cm}}$



**Directions:** Use the information on page 9 to help you compute the circumferences of these circles. ( $C = 2\pi r$  or  $C = \pi d$ )

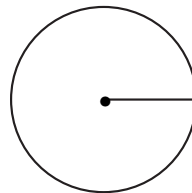
5.



$r = 4 \text{ m}$

$C = \underline{\hspace{2cm}}$

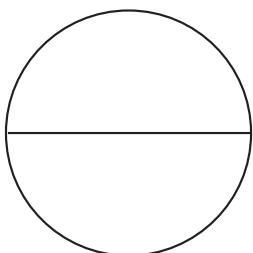
6.



$r = 6 \text{ in.}$

$C = \underline{\hspace{2cm}}$

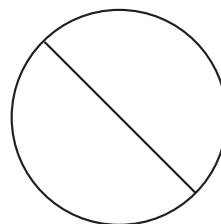
7.



$d = 10 \text{ cm}$

$C = \underline{\hspace{2cm}}$

8.



$d = 7 \text{ m}$

$C = \underline{\hspace{2cm}}$



# Answer Key

## Page 6

1.  $5\frac{11}{16}$ "
2.  $2\frac{5}{16}$ "
3.  $6\frac{3}{4}$ "
4.  $6\frac{7}{16}$ "
- 5.–18. Answers will vary.

## Pages 7 and 8

Answers will vary.

## Page 10

1. 18.2 cm
2. 26.2 cm
3.  $13\frac{1}{2}$  cm
4.  $16\frac{1}{2}$  ft.
5.  $15\frac{1}{4}$  in.
6.  $18\frac{3}{8}$  cm.
- 7.–10. Answers will vary.

## Page 11

1. 15.6 cm
2.  $11\frac{1}{4}$  in.
3. 24.4 m
4.  $18\frac{3}{4}$  ft.
5. 74.4 m
6. 64 yd.
7. 137.4 cm
8. 105.3 m

## Page 12

1. 19.1 m
2. 22.6 m
3. 26 in.
4.  $20\frac{1}{2}$  ft.
5. 25.12 m
6. 37.68 in.
7. 31.4 cm
8. 21.98 m

## Page 14

1.  $41\text{ m}^2$
2.  $126\text{ yd.}^2$
3.  $67.5\text{ cm}^2$
4.  $6.08\text{ m}^2$
5.  $34\text{ ft.}^2$
6.  $16\frac{1}{4}\text{ in.}^2$
7.  $3,680\text{ m}^2$
8.  $7,500\text{ mm}^2$

## Page 15

1.  $24\text{ ft.}^2$
2.  $45\text{ yd.}^2$
3.  $11.66\text{ cm}^2$
4.  $27.72\text{ cm}^2$

5.  $405\text{ in.}^2$
6.  $49.14\text{ m}^2$
7.  $116.39\text{ cm}^2$
8.  $86.45\text{ m}^2$

## Page 16

1.  $50.24\text{ m}^2$
2.  $78.5\text{ cm}^2$
3.  $314\text{ cm}^2$
4.  $452.16\text{ cm}^2$
5.  $1,256\text{ cm}^2$
6.  $615.44\text{ ft.}^2$
7.  $706.5\text{ in.}^2$
8.  $1,962.5\text{ m}^2$

## Page 18

1.  $105\text{ m}^3$
2.  $720\text{ ft.}^3$
3.  $343\text{ cm}^3$
4.  $165\text{ in.}^3$
5.  $240\text{ yd.}^3$
6.  $67.032\text{ m}^3$
7.  $92.736\text{ m}^3$
8.  $694.512\text{ cm}^3$
9.  $1,728\text{ ft.}^3$
10.  $86\frac{6}{8}\text{ ft.}^3$

## Page 19

1.  $351.68\text{ m}^3$
2.  $169.56\text{ cm}^3$
3.  $282.6\text{ cm}^3$
4.  $18.84\text{ in.}^3$
5.  $50,240\text{ cm}^3$
6.  $1,538.6\text{ ft.}^3$

## Pages 20–23

Answers will vary.

## Page 24

1. 6 lbs. 4 oz.
2. 1 ton 300 lbs.
3. 4,000 cassettes
4. 100 pills
5. 100,000 pills
6. 2,000 dictionaries
7. 12,000 staplers
8. 100 people
9. 500 mg or  $\frac{1}{2}$  g
10. 220 kg
11. 4,400 kg
12. 2,200 clips
13. 6,400 calculators
14. 40 cameras

## Page 26

1. 8 fl. oz.
2. 16 fl. oz.
3. 32 fl. oz.
4. 48 fl. oz.
5. 64 fl. oz.
6. 72 fl. oz.
7. 32 fl. oz.
8. 64 fl. oz.
9. 160 fl. oz.
10. 96 fl. oz.
11. 4 qt.
12. 16 qt.
13. 128 fl. oz.
14. 60 qt.
15. 1,920 fl. oz.
16. 16 fl. oz.
17. 48 fl. oz.
18. 112 fl. oz.
19. 40 pints
20. 176 cups
21. 120 pints
22. 1,280 fl. oz.
23. 34 cups
24. 176 fl. oz.
25. 344 fl. oz.

## Page 27

1. 30 mL
2. 240 mL
3. 1,000 mL
4. 960 mL
5. 40 mL
6. 480 mL
7. 3,840 mL
8. 3.84 L
9. 38.4 L
10. 69.1 L
11. 960 L
12. 96 L
13. 96 L
14. 1920
15. 360 L

## Page 28

1. 2 qt.
2. 12 mL
3. 80 mL
4. 336 mL
5. 50 pennies
6. 432 mL

7. 24 fl. oz.
8. 384 mL
9. 128 quarters
10. 19.2 L
11. 8 times
12. 48 cups

## Page 30

1.  $40^\circ$  acute
2.  $120^\circ$  obtuse
3.  $180^\circ$  straight
4.  $90^\circ$  right
5.  $50^\circ$  acute
6.  $130^\circ$  obtuse
7.  $250^\circ$  reflex
8.  $215^\circ$  reflex
9.  $90^\circ$  right
10.  $80^\circ$  acute

## Page 31

1.  $\angle BAC = 100^\circ$   
 $\angle CBA = 35^\circ$   
 $\angle ACB = 45^\circ$   
 $\triangle ABC = 180^\circ$
2.  $\angle CDE = 50^\circ$   
 $\angle ECD = 70^\circ$   
 $\angle DEC = 60^\circ$   
 $\triangle DEC = 180^\circ$
3.  $\angle LMN = 90^\circ$   
 $\angle MNL = 30^\circ$   
 $\angle MLN = 60^\circ$   
 $\triangle LMN = 180^\circ$
4.  $\angle MNO = 25^\circ$   
 $\angle OMN = 65^\circ$   
 $\angle MON = 90^\circ$   
 $\triangle MNO = 180^\circ$
5.  $\angle XYZ = 60^\circ$   
 $\angle ZXY = 60^\circ$   
 $\angle YZX = 60^\circ$   
 $\triangle XYZ = 180^\circ$
6.  $\angle WPO = 154^\circ$   
 $\angle POW = 11^\circ$   
 $\angle PWO = 15^\circ$   
 $\triangle WPO = 180^\circ$