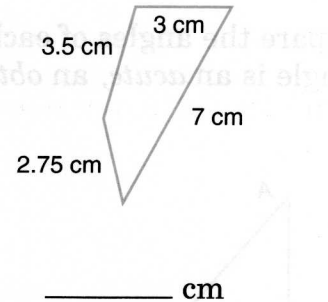
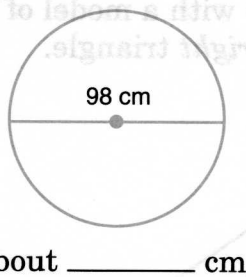
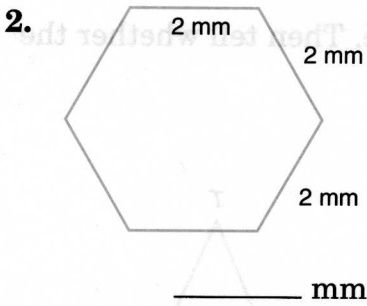
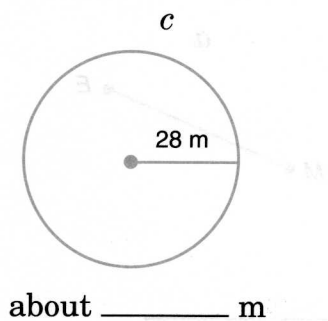
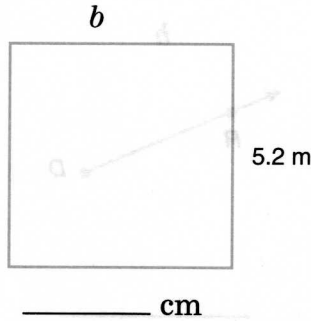
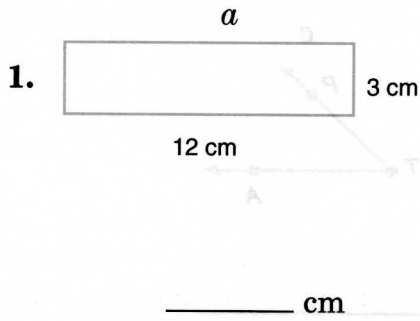


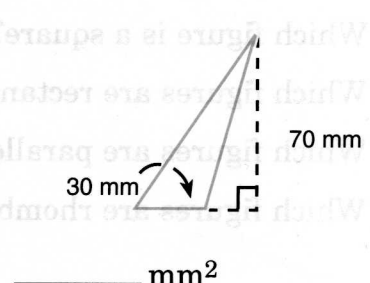
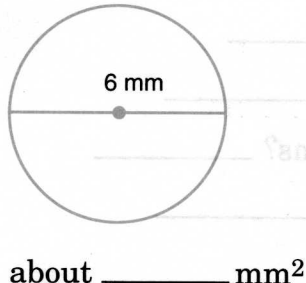
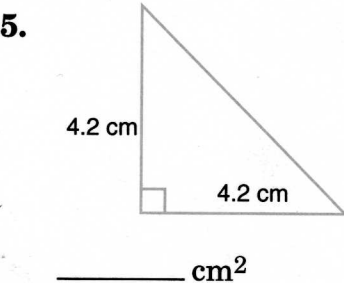
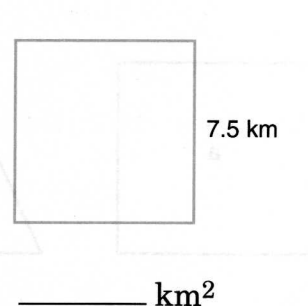
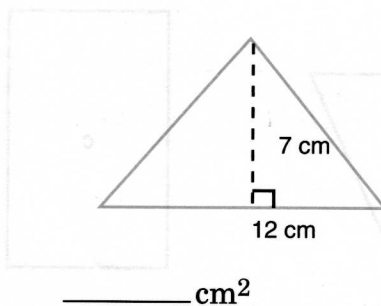
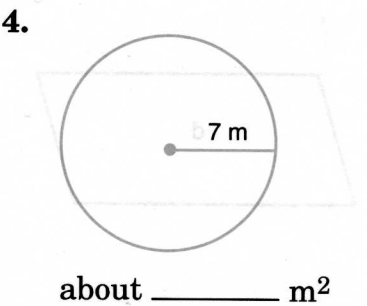
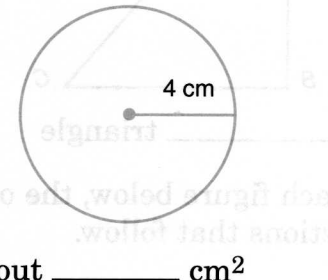
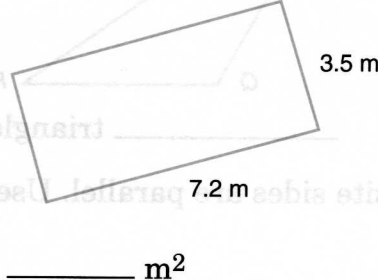
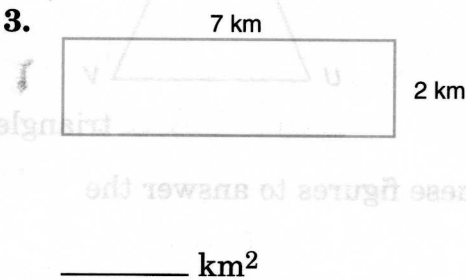
CHAPTER 11 PRETEST

Perimeter and Area

Find the perimeter (or circumference) of each figure below. Use 3.14 for π .

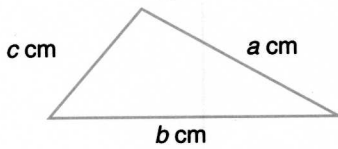


Find the area of each figure below. Use 3.14 for π .



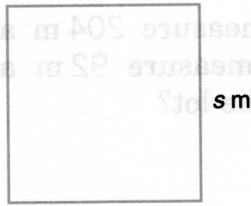
Lesson 1 Perimeter PRE-ALGEBRA

The distance around a figure is called its **perimeter**.



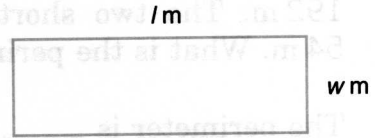
$$p = a + b + c$$

If $a = 4$, $b = 5$, and $c = 3$,
the perimeter of the triangle
is _____ cm.



$$p = 4 \times s$$

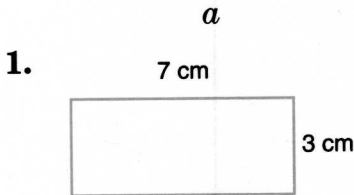
If $s = 7\frac{1}{2}$, the perimeter of
the square is _____ m.



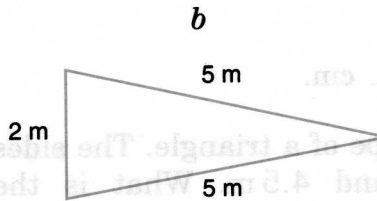
$$p = 2 \times (l + w)$$

If $l = 8$ and $w = 3$, the
perimeter of the rectangle
is _____ m.

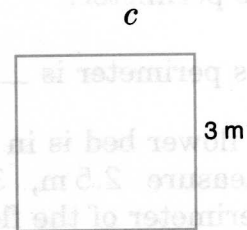
Find the perimeter of each figure.



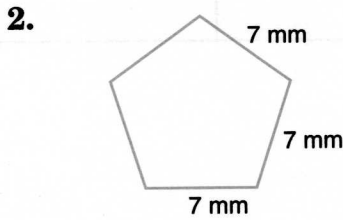
_____ cm



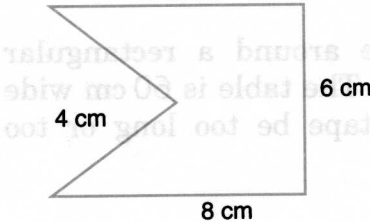
_____ ft



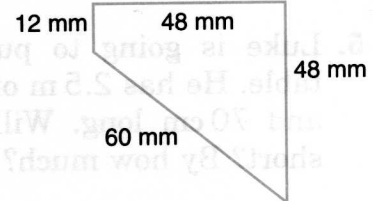
_____ m



_____ mm



_____ cm



_____ mm

Complete the table for each rectangle described below.

	Length	Width	Perimeter
3.	9 m	4 m	_____ m
4.	4.5 km	3.5 km	_____ km
5.	7.5 cm	2.5 cm	_____ cm
6.	3.5 m	2 m	_____ m
7.	7.5 cm	6.5 cm	_____ cm

Lesson 1 Problem Solving PRE-ALGEBRA

Solve each problem.

1. The two longer sides of a lot measure 204 m and 192 m. The two shorter sides measure 92 m and 54 m. What is the perimeter of the lot?

The perimeter is _____ m.

2. Mrs. Batka's lot is shaped like a rectangle. It is 175 m long and 48 m wide. What is the perimeter of her lot?

The perimeter is _____ m.

3. A photograph measures 9.9 cm on each side. What is its perimeter?

Its perimeter is _____ cm.

4. A flower bed is in the shape of a triangle. The sides measure 2.5 m, 3.5 m, and 4.5 m. What is the perimeter of the flower bed?

The perimeter is _____ m.

5. Luke is going to put tape around a rectangular table. He has 2.5 m of tape. The table is 60 cm wide and 70 cm long. Will the tape be too long or too short? By how much?

The tape will be too _____.

by _____ cm.

6. Each side of a triangle is 2.3 m long. Each side of a square is 1.6 m long. Which figure has the greater perimeter? How much greater?

The _____ has the greater perimeter.

It is _____ m greater.

1.

2.

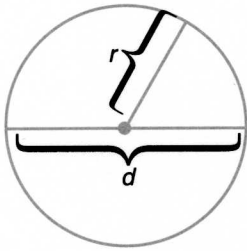
3.

4.

5.

6.

Lesson 2 Circumference of a Circle PRE-ALGEBRA



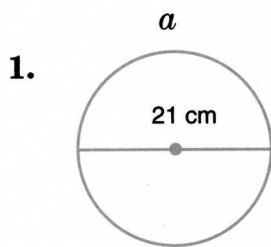
The perimeter of a circle is called its **circumference**.
 The length of a *diameter* is twice the length of a *radius*.

$$d = 2 \times r \text{ and } r = d \div 2$$

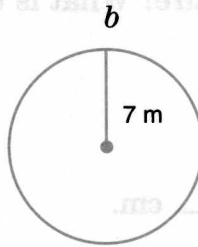
For circles of all sizes, $C \div d$ names the same number. This number is represented by π (spelled *pi* and pronounced *pie*).
 π is approximately equal to 3.14.

To find the circumference of a circle, use $C = \pi \times d$ or $C = 2 \times \pi \times r$.

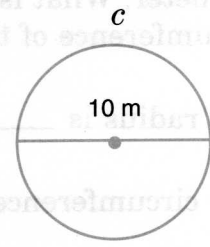
Find the approximate circumference of each circle. Use 3.14 for π .



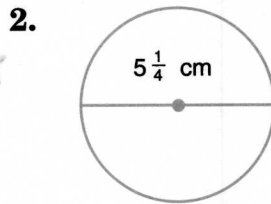
about _____ cm



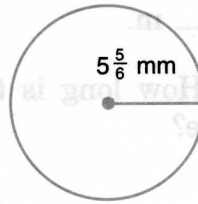
about _____ m



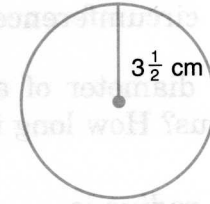
about _____ m



about _____ cm



about _____ mm



about _____ cm

Complete the table for each circle described below. Use 3.14 for π .

	Diameter	Radius	Approximate circumference
3.	8 m	_____ m	_____ m
4.	_____ cm	3 cm	_____ cm
5.	7 mm	_____ mm	_____ mm
6.	_____ cm	8.5 cm	_____ cm
7.	9.4 km	_____ km	_____ km
8.	_____ m	7.2 m	_____ m

Lesson 2 Problem Solving PRE-ALGEBRA

Solve each problem. Use 3.14 for π .

1. Mr. Wilson's spare wheel has a 18-cm radius. What is the diameter of the wheel? What is the circumference of the wheel?

The diameter is _____ cm.

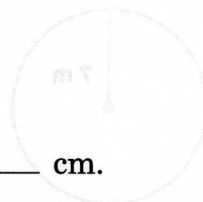
The circumference is about _____ cm.



2. The spare for Ms. Wolfson's car has a 71-cm diameter. What is the radius of the tire? What is the circumference of the tire?

The radius is _____ cm.

The circumference is about _____ cm.



3. A circular play area has a radius of 16.5 m. What is the circumference of the play area?

The circumference is about _____ m.

4. The diameter of a dime is 18 mm. How long is the radius? How long is the circumference?

The radius is _____ mm.

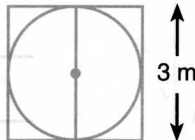
The circumference is about _____ mm.



5. The top of a large vat has a 2.5 m diameter. What is the circumference of the top of the vat?

The circumference is about _____ m.

6. Which has the greater perimeter, the square or the circle? How much greater?



The _____ has the greater perimeter.

It is about _____ m greater.

Lesson 3 Circumference of a Circle PRE-ALGEBRA

$$C = \pi \times d \text{ and } d = C \div \pi$$

Find d if $C = 66$.

$$\begin{aligned} d &= C \div \pi \\ &\doteq 66 \div 3.14 \\ &\doteq 21 \end{aligned}$$

The diameter is about _____ units.

$$C = 2 \times \pi \times r \text{ and } r = C \div (2 \times \pi)$$

Find r if $C = 25.12$

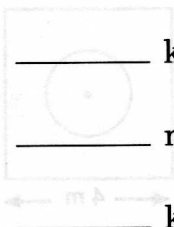
$$\begin{aligned} r &= C \div (2 \times \pi) \\ &\doteq 25.12 \div (2 \times 3.14) \\ &= 25.12 \div 6.28 \\ &= 4 \end{aligned}$$

The radius is about _____ units.

Complete the table for each circle described below.

Use 3.14 for π

	Approximate diameter	Approximate radius	Circumference
1.	_____ cm	_____ cm	22 cm
2.	_____ m	_____ m	110 m
3.	_____ mm	_____ mm	88 mm
4.	_____ m	_____ m	11 m
5.	_____ cm	_____ cm	2 cm
6.	_____ m	_____ m	33 m
7.	_____ m	_____ m	6.28 m
8.	_____ mm	_____ mm	31.4 mm
9.	_____ cm	_____ cm	9.42 cm
10.	_____ km	_____ km	21.98 km
11.	_____ m	_____ m	3.14 m
12.	_____ km	_____ km	12.56 km



Lesson 3 Problem Solving PRE-ALGEBRA

Solve each problem. Use 3.14 for π .

1. The circumference of a wheel is 110 cm. What is the diameter of the wheel? What is the radius?

The diameter is about _____ cm.

The radius is about _____ cm.

2. What is the radius of a circle if the circumference is 7 m? What is the diameter?

The radius is about _____ m.

The diameter is about _____ m.

3. The circumference of a coin is 3.14 cm. What is the diameter of the coin? What is the radius?

The diameter is about _____ cm.

The radius is about _____ cm.

4. The circumference of a circular flower bed is 9.42 m. What is the radius of the flower bed? What is the diameter of the flower bed?

The radius is about _____ m.

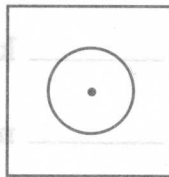
The diameter is about _____ m.

5. The circumference of a circle is 1.57 cm. What is the diameter? What is the radius?

The diameter is about _____ cm.

The radius is about _____ cm.

6. The circumference of the circle is 9.72 m less than the perimeter of the square. What is the diameter of the circle? What is the radius?



The diameter is about _____ m.

The radius is about _____ m.

1.

2.

3.

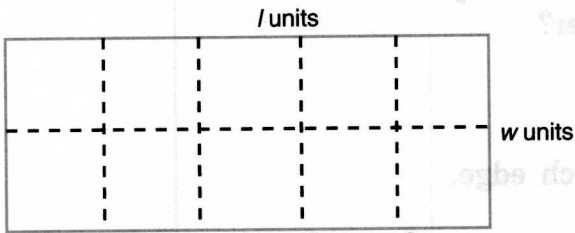
4.

5.

6.

Lesson 4 Area of Rectangles PRE-ALGEBRA

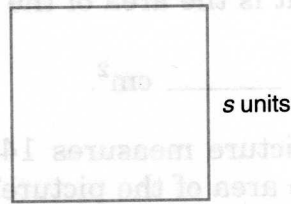
To find the **area measure** (A) of a rectangle, multiply the measure of the *length* (l) by the measure of the *width* (w).



Find A if $l = 5$ and $w = 2$.

$$\begin{aligned}
 A &= l \times w \\
 &= 5 \times \underline{2} \\
 &= \underline{10}
 \end{aligned}$$

The area is 10 square units.

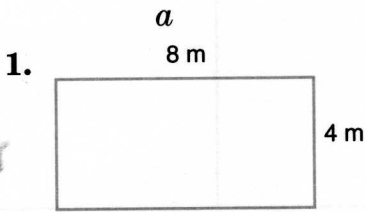


Find A if $s = 7$.

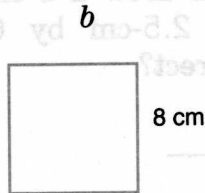
$$\begin{aligned}
 A &= s \times s \\
 &= \underline{\quad} \times \underline{\quad} \\
 &= \underline{\quad}
 \end{aligned}$$

The area is _____ square units.

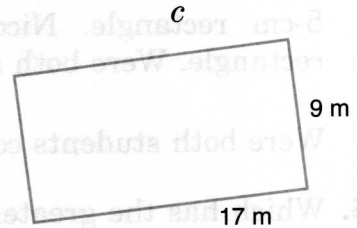
Find the area of each rectangle below.



_____ m²



_____ cm²



_____ m²

Complete the table for each rectangle described below.

	Length	Width	Area
2.	18 mm	3 mm	_____ mm ²
3.	7.5 cm	7.5 cm	_____ cm ²
4.	4.5 km	3.5 km	_____ km ²
5.	2.25 m	2.25 m	_____ m ²
6.	6.5 m	2.5 m	_____ m ²
7.	8.3 km	4.1 km	_____ km ²

Lesson 4 Problem Solving PRE-ALGEBRA

Solve each problem.

1. A rectangular sheet of paper measures 22 cm by 28 cm. What is the area of the sheet of paper?

The area is _____ cm^2 .

2. A square picture measures 14 cm along each edge. What is the area of the picture?

The area is _____ cm^2 .

3. Ms. Hudson's rectangular lot is 18 m wide and 31 m long. What is the area of her lot?

The area is _____ m^2 .

4. Mr. Hatfield asked the students to draw a rectangle that has an area of 15 cm^2 . Mark drew a 3-cm by 5-cm rectangle. Nicole drew a 2.5-cm by 6-cm rectangle. Were both students correct?

Were both students correct? _____

5. Which has the greater area, a rectangle 4 m by 6 m or a square that is 5 m long on each side? How much greater?

The _____ has the greater area.

It is _____ m^2 greater.

6. Trina had a rectangular-shaped board that measured 6.5 cm by 4.2 cm. A 2-cm piece was cut off the length. What is the area of the piece cut off? What is the area of the other part?

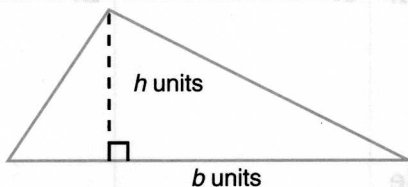
The area of the cut-off piece is _____ cm^2 .

The area of the other part is _____ cm^2 .

1.	2.
3.	4.
5.	
6.	

Lesson 5 Area of Triangles PRE-ALGEBRA

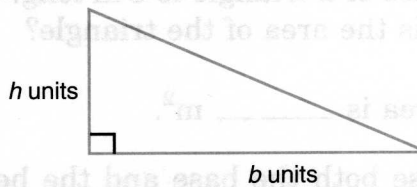
To find the *area measure* (A) of a triangle, take $\frac{1}{2}$ the product of the measures of the *base* (b) and the *height* (h).



Find A if $b = 16$ and $h = 5$.

$$\begin{aligned} A &= \frac{1}{2} \times b \times h \\ &= \frac{1}{2} \times 16 \times 5 \\ &= \frac{1}{2} \times 80 \\ &= 40 \end{aligned}$$

The area is 40 square units.



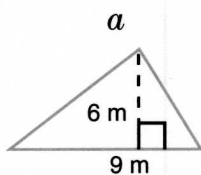
Find A if $b = 12$ and $h = 7$.

$$\begin{aligned} A &= \frac{1}{2} \times b \times h \\ &= \frac{1}{2} \times \underline{\quad} \times \underline{\quad} \\ &= \underline{\quad} \times \underline{\quad} \\ &= \underline{\quad} \end{aligned}$$

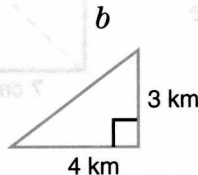
The area is _____ square units.

Find the area of each triangle below.

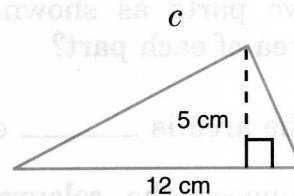
1.



_____ m^2



_____ km^2



_____ cm^2

Complete the table for each triangle described below.

	Base	Height	Area
2.	12 m	6 m	_____ m^2
3.	15 km	4 km	_____ km^2
4.	3.5 cm	4 cm	_____ cm^2
5.	7.5 cm	8.2 cm	_____ cm^2
6.	4.25 mm	3.5 mm	_____ mm^2
7.	12 m	14.5 m	_____ m^2

Lesson 5 Problem Solving PRE-ALGEBRA

Solve each problem.

1. The base of a triangle is 6 m long. The height is 9 m. What is the area of the triangle?

The area is _____ m^2 .

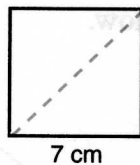
2. Suppose both the base and the height of a triangle are half the length of those in problem 1. What is the area of the triangle?

The area is _____ m^2 .

3. A triangular playing field has a base of 14 m and a height of 18 m. What is the area of the field?

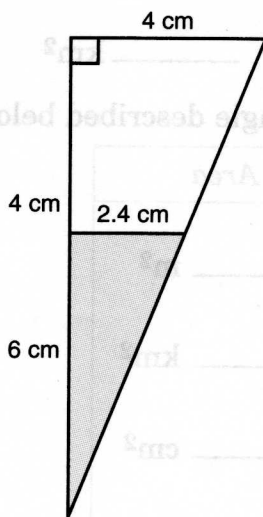
The area is _____ m^2 .

4. A square photograph was cut into two parts as shown. What is the area of each part?



The area is _____ cm^2 .

5. Suppose the coloured region is removed from the drawing at the right. What is the area of the part removed? What is the area of the remaining part?



The area of the part that is removed

is _____ cm^2 .

The area of the part that remains

is _____ cm^2 .

6. In a triangle, the sides that form a right angle are 3.2 m long and 1.6 m long. What is the area of the triangle?

The area is _____ m^2 .

1. 2.

3. 4.

5.

6.

Lesson 6 Area of Circles PRE-ALGEBRA

$A = \pi \times r \times r$ is used to find the area measure of a circle.

Find A if $r = 4$.

$$\begin{aligned}
 A &= \pi \times r \times r \\
 &\approx 3.14 \times 4 \times \underline{\hspace{2cm}} \\
 &= 3.14 \times \underline{\hspace{2cm}} \\
 &= \underline{\hspace{2cm}}
 \end{aligned}$$

The area is about _____ square units.

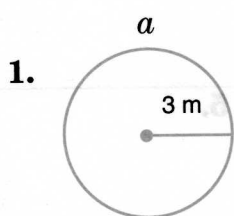
Find A if $d = 14$.

(Since $d = 14$, $r = d \div 2$ or 7.)

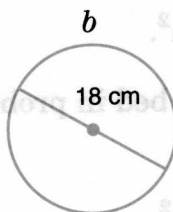
$$\begin{aligned}
 A &= \pi \times r \times r \\
 &\approx 3.14 \times \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} \\
 &= 3.14 \times \underline{\hspace{2cm}} \\
 &= \underline{\hspace{2cm}}
 \end{aligned}$$

The area is about _____ square units.

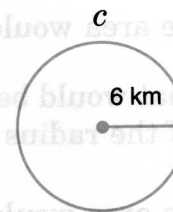
Find the approximate area of each circle below. Use 3.14 for π .



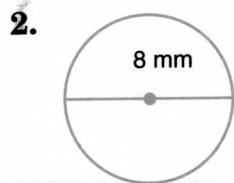
about _____ m^2



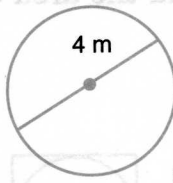
about _____ cm^2



about _____ km^2



about _____ mm^2



about _____ m^2



about _____ km^2

Complete the table. Use 3.14 for π .

	Diameter	Radius	Approximate area
3.	_____ mm	21 mm	_____ mm^2
4.	14 m	_____ m	_____ m^2
5.	_____ cm	16 cm	_____ cm^2
6.	70 km	_____ km	_____ km^2
7.	_____ mm	28 mm	_____ mm^2

Lesson 6 Problem Solving PRE-ALGEBRA

Solve each problem. Use 3.14 for π .

1. What is the area of a circle if the diameter of the circle is 4 cm?

The area is about _____ cm^2 .

2. What is the area of a circular flower bed if the radius is 105 cm?

The area is about _____ cm^2 .

3. What would be the area of the flower bed in problem 2 if the radius were half as long?

The area would be about _____ cm^2 .

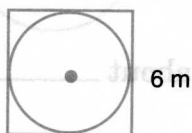
4. What would be the area of the flower bed in problem 2 if the radius were twice as long?

The area would be about _____ cm^2 .

5. A quarter has a radius of 12 mm. Find the area of a quarter.

The area is about _____ mm^2 .

6. What is the area of the circle enclosed in the square? What is the area of the square?



The area of the circle is about _____ m^2 .

The area of the square is _____ m^2 .

7. Which has the greater area, circle **A** with a diameter of 4 m or circle **B** with a radius of 3 m? How much greater?

Circle _____ has the greater area.

It is about _____ m^2 greater.

1.

2.

3.

4.

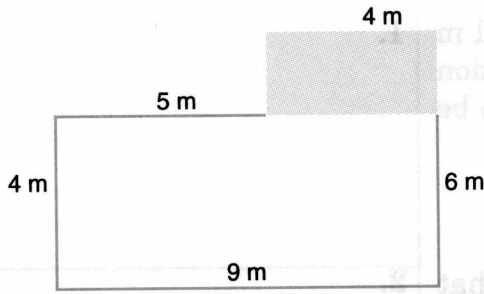
5.

6.

7.

Lesson 7 Area of Irregular Shapes PRE-ALGEBRA

Study how the area of this figure is found.



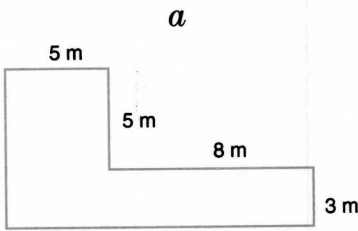
area of coloured part area of white part

$$\begin{aligned}
 A &= l \times w & A &= l \times w \\
 &= 4 \times 2 & &= 9 \times 4 \\
 &= \underline{\hspace{2cm}} & &= \underline{\hspace{2cm}}
 \end{aligned}$$

The total is _____ + _____ or _____ m²

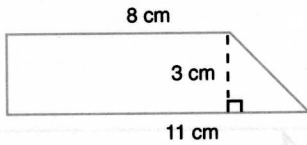
Find the area of each figure.

1.



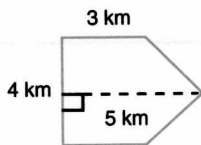
_____ m²

2.

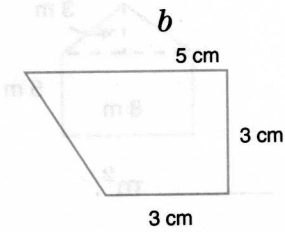


_____ cm²

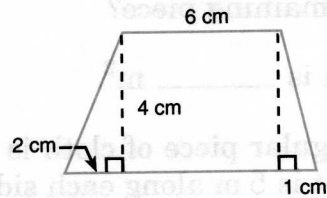
3.



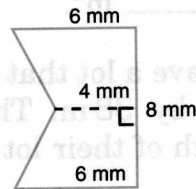
_____ km²



_____ cm²



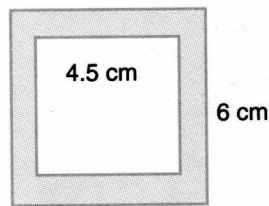
_____ cm²



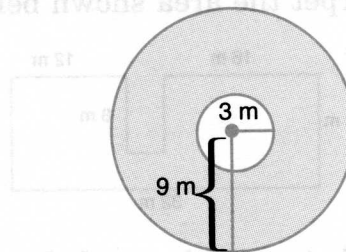
_____ mm²

Find the area of the coloured part of each figure.

4.



_____ cm²



about _____ m²

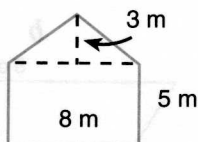
Lesson 7 Problem Solving PRE-ALGEBRA

Solve each problem.

1. Mrs. Roberts has a one-storey house that is 11 m wide and 16 m long. She plans to build an addition 4 m by 5 m. What will the total area of the house be then?

The total area will be _____ m².

2. Ashleigh has a garden shaped as shown below. What is the area of the garden?



The area is _____ m².

3. A rectangular piece of cloth is 8 m by 20 m. A piece with an area of 144 m² is removed. What is the area of the remaining piece?

The area is _____ m².

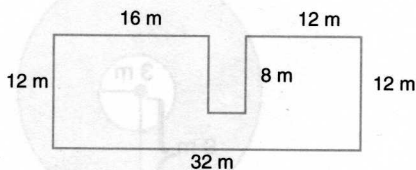
4. A rectangular piece of cloth is 7 m by 8 m. A square piece that is 5 m along each side is removed. What is the area of the remaining piece?

The area is _____ m².

5. The Treadles have a lot that is 55 m by 120 m. Their house is 32 m by 38 m. Their garage is 20 m by 24 m. How much of their lot is vacant?

_____ m² of their lot is vacant.

6. How many square metres of carpeting would be needed to carpet the area shown below?



_____ m² feet would be needed.

1.

2.

3.

4.

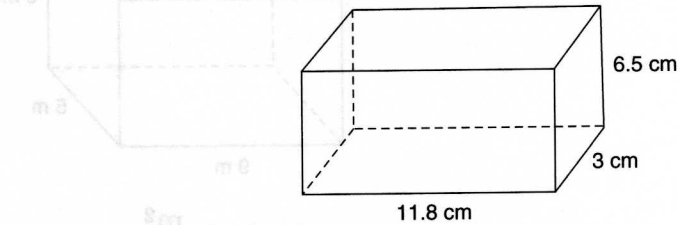
5.

6.

Lesson 8 Surface Area

The **surface area** (SA) of a figure is the sum of the areas of all the surfaces of the figure. Surface area is measured in square units.

The surface area of a solid is the sum of the areas of all its faces.



Find the surface area of the rectangular prism shown.

area of top and bottom rectangles: $2 \times 11.8 \times 3 = 2 \times 35.4 = \underline{70.8} \text{ cm}^2$

area of right and left rectangles: $2 \times 6.5 \times 3 = 2 \times 19.5 = \underline{39} \text{ cm}^2$

area of front and back rectangles: $2 \times 11.8 \times 6.5 = 2 \times 76.7 = \underline{153.4} \text{ cm}^2$

$SA = 70.8 + 39 + 153.4 = 263.2 \text{ cm}^2$

The surface area is 263.2 cm^2 .

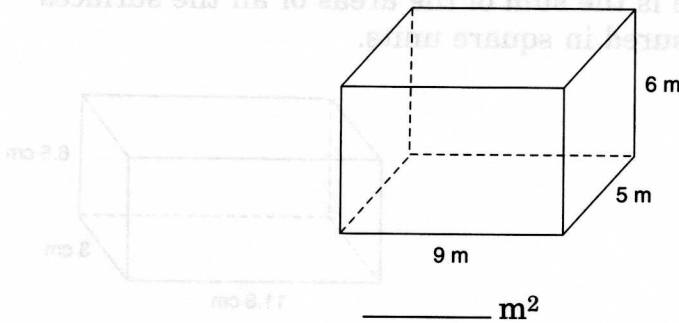
Complete the table for each rectangular prism described below.

	<i>Length</i>	<i>Width</i>	<i>Height</i>	<i>Surface area</i>
1.	6 m	10 m	5 m	_____ m^2
2.	3.5 mm	7 mm	11 mm	_____ mm^2
3.	18 cm	12 cm	9 cm	_____ cm^2
4.	13 m	8 m	2 m	_____ m^2
5.	4 cm	17 cm	11 cm	_____ cm^2
6.	15 mm	6 mm	10 mm	_____ mm^2
7.	1 m	7 m	5 m	_____ m^2

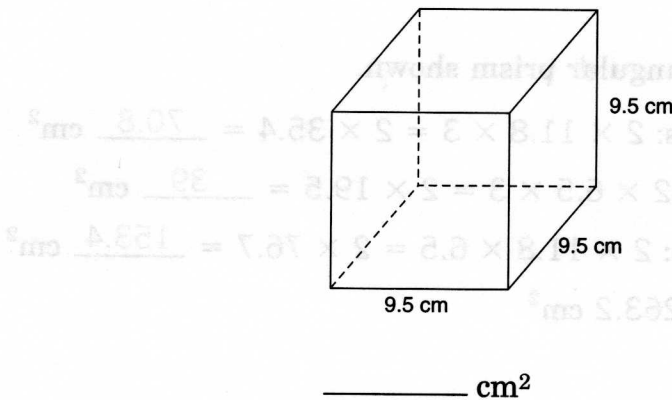
Lesson 8 Surface Area

Find the surface area of each figure.

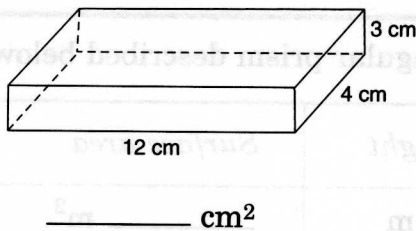
1.



2.



3.



Solve each problem.

4. Jessica's dad made her a wooden jewellery box in the shape of a rectangular prism. The jewellery box is 35 cm by 20 cm by 13 cm. What is the surface area of the jewellery box?

The surface area is _____ cm².

5. Paul baked cookies for his aunt and put them in a rectangular tin. He decorated the tin by covering it completely with construction paper. The tin is 5 cm tall, 10 cm wide, and 15 cm long. What is the minimum amount of construction paper that Paul needed to completely cover the tin?

Paul needed at least _____ cm² of paper.

4.

5.

CHAPTER 11 PRACTICE TEST

Perimeter and Area

Complete the table for each rectangle described below.

	<i>Length</i>	<i>Width</i>	<i>Perimeter</i>	<i>Area</i>
1.	7 m	5 m	_____ m	_____ m ²
2.	3 cm	1.5 cm	_____ cm	_____ cm ²
3.	3.5 mm	1.5 mm	_____ mm	_____ mm ²
4.	5 cm	5 cm	_____ cm	_____ cm ²

Complete the table for each triangle described below.

	<i>Base</i>	<i>Height</i>	<i>Area</i>
5.	7 cm	8 cm	_____ cm ²
6.	9.5 mm	4 mm	_____ mm ²
7.	7.5 m	3.4 m	_____ m ²

Complete the table for each circle described below. Use 3.14 for π .

	<i>Diameter</i>	<i>Radius</i>	<i>Approximate circumference</i>	<i>Approximate area</i>
8.	8 m	_____ m	_____ m	_____ m ²
9.	_____ mm	100 mm	_____ mm	_____ mm ²
10.	6 cm	_____ cm	_____ cm	_____ cm ²