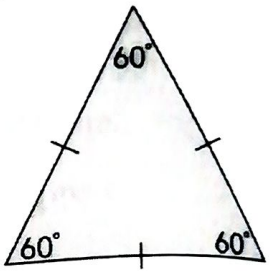
Example 7

The perimeter of an equilateral triangle is 21 cm. Determine the length of each side.



Solution

$P = 3s$

$21 = 3s$ Divide both sides of the equation by 3

$s = 7$

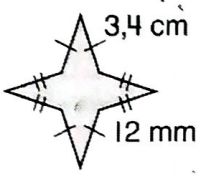
Each side of the equilateral triangle is 7 cm long.

Activity 4.2 Perimeter of 2D shapes

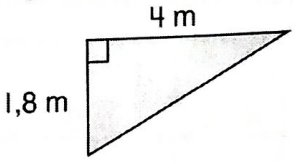
40 minutes

1. Determine the perimeter of the following shapes.

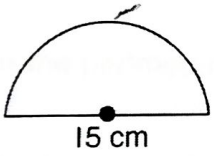
a)



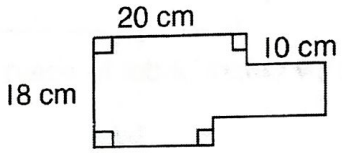
b)



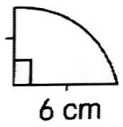
c)



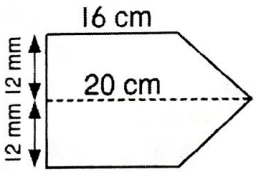
d)



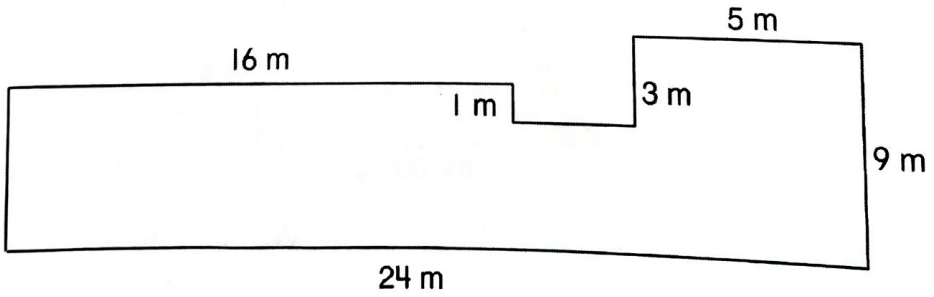
e)



f)

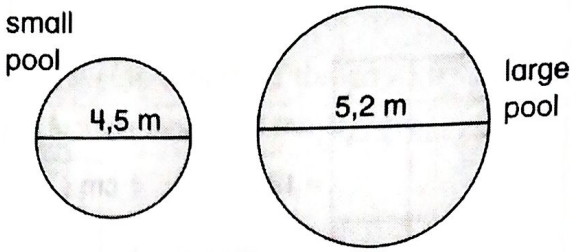


2. The perimeter of a square is 32 cm. Calculate the length of each side of the square.
3. The diagram shows the roof plan of a new house. Use the plan to calculate the length of guttering required if the guttering must be attached all the way around the roof.

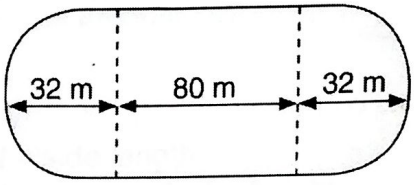


4. Calculate the circumference of a circle with a:
   a) diameter of 42 cm
   b) radius of 12 m
   c) diameter of 2,9 km
   d) radius of 72,5 mm.

5. The Ntuli family want to install a circular pool in their garden.
There are two sizes available.
The smaller pool has a diameter of 4,5 m and the larger pool has a diameter of 5,2 m.
Calculate the difference in circumference of the two pools.
Give your answer correct to the nearest metre.

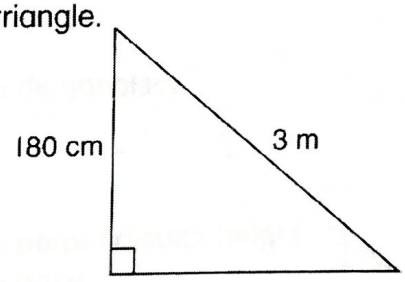


6. Calculate the distance around the racetrack shown. Give your answer to the nearest metre.

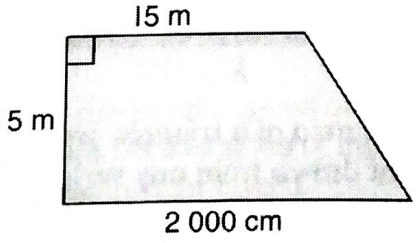


7. Calculate the perimeter of a rectangular piece of fabric that is 90 cm wide and 2,4 m long.

8. Calculate the perimeter of this triangle.



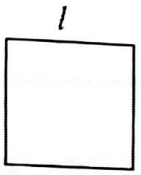
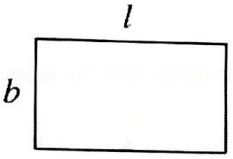
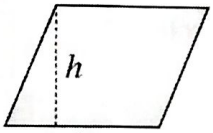
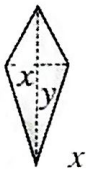
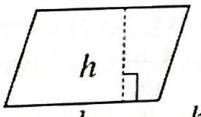
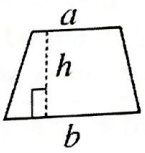
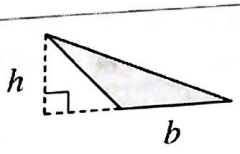
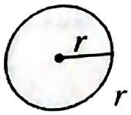
9. Calculate the perimeter of this shape. Round your answer off to two decimal places.



Using formulae to calculate area

We use different formulae to calculate the area of different shapes.

To calculate the area of a polygon or a circle, use these formulae.

Name of shape	Shape	Formula to calculate area
Square	 l = side length of the square	$A = l^2$
Rectangle	 l = length b = breadth	$A = l \times b$
Rhombus	 l = side length h = perpendicular height	$A = l \times h$
Kite	 x and y are diagonals	$A = \frac{1}{2}(d_1 \times d_2)$ $= \frac{1}{2}(xy)$
Parallelogram	 h = perpendicular height b = base	$A = b \times h$
Trapezium	 a and b are parallel sides of the trapezium. h = perpendicular height	$A = \frac{1}{2}(a + b)h$
Triangle	 h = perpendicular height b = base	$A = \frac{1}{2}(b \times h)$
Circle	 r = radius of the circle	$A = \pi r^2$