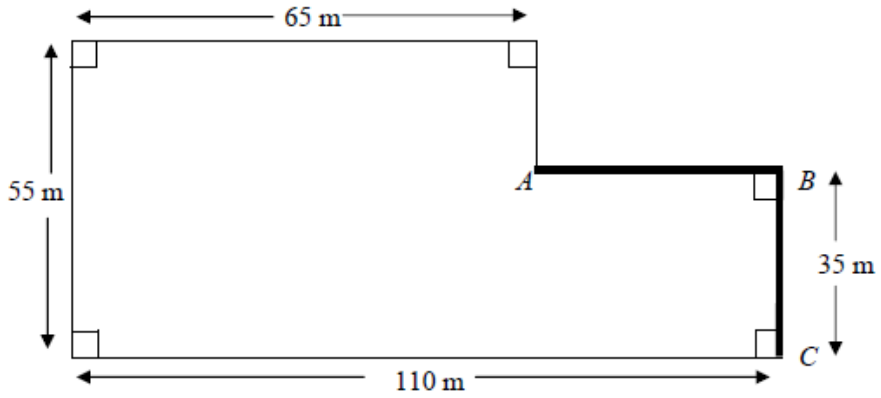
Maths
Junior Certificate
Ordinary Level

Past Exam Questions on
Perimeter, Length and Area

Q3 2011 Paper 2

Question 3 **(Suggested maximum time: 5 minutes)**

The shape and measurements of a field are shown in the diagram below.



(a) Find the length $|AB|$.

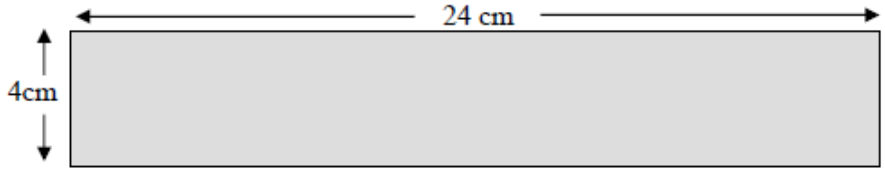
(b) Find the length of the perimeter of the field.

(c) The sections $[AB]$ and $[BC]$ are stone walls. A farmer wishes to put fencing around the rest of the field. The fencing costs €62·50 per 5 metres. Find the cost of the fencing.

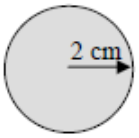
Q1 Part (c) 2010 Paper 2

(c) (i) A rectangular piece of silver measures 4 cm by 24 cm.

Find, in cm^2, the area of the piece of silver.



(ii) Brian wants to cut circular discs of radius 2 cm from the piece of silver.



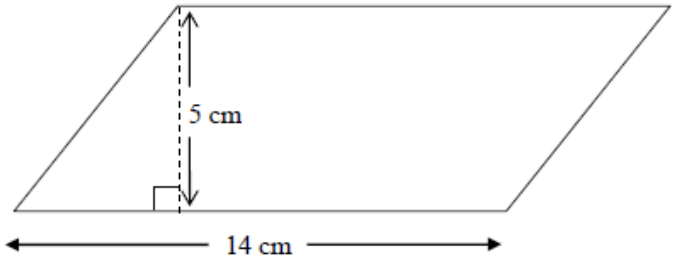
What is the greatest number of discs that he can cut from the piece?

(iii) Taking π as 3·142, find in cm^2, the area of the silver remaining after the discs have been cut out.

Give your answer correct to one decimal place.

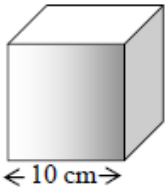
Q2 2010 Paper 2

2. **(a)** A parallelogram has dimensions as shown in the diagram.

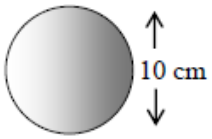


Find, in cm^2, the area of the parallelogram.

(b) **(i)** A cube with side length 10 cm is shown.
Find, in cm^3, the volume of the cube.



(ii) A sphere with diameter 10 cm is shown.
Taking π as 3·142 find, in cm^3, the volume of the sphere.
Give your answer to the nearest whole number.

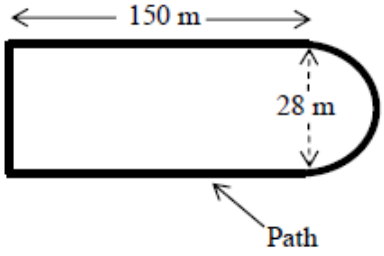


(iii) Express the volume of the sphere in **(ii)**, as a percentage of the volume of the cube in **(i)**.

(c) A park is in the shape of a rectangle with a semicircular end.

The rectangle is 150 m long and 28 m wide.
The diameter of the semicircular end is also 28 m.

There is a path around the park which is used for walking and jogging.



(i) Taking π as 3·142, calculate the length of the semicircular end.
Give your answer to the nearest metre.

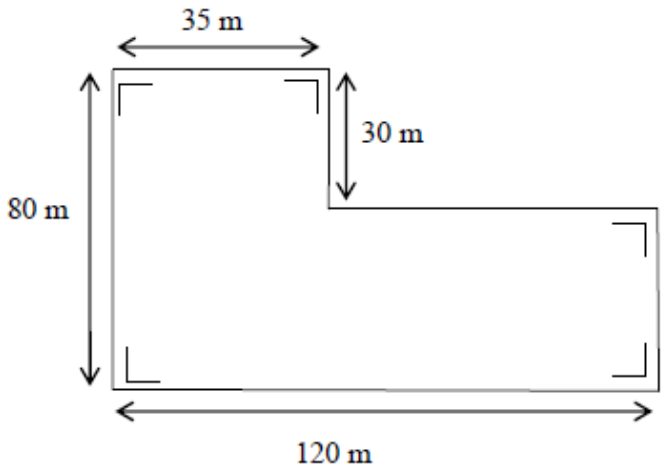
(ii) Calculate the total length of the path around the park.

(iii) Barbara wishes to jog 2·5 km.

How many laps of the path must she complete to ensure that she jogs this distance?

Q1 2009 Paper 2

1(c) A field has shape and measurements as shown in the diagram.



(i) Find, in metres, the length of the perimeter of the field.

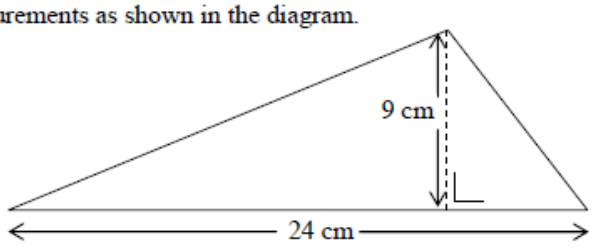
(ii) Find, in m^2, the area of the field.

(iii) Tim bought the field at a cost of €41 000 per hectare.
How much did Tim pay for the field?

[1 hectare = 10 000 m^2]

Q2 Part (a) 2009 Paper 2

2. (a) A triangle has measurements as shown in the diagram.



Find, in cm^2, the area of the triangle.

Q2 Part (b) 2009 Paper 2

2(b) A bicycle wheel has a diameter of 60 cm.

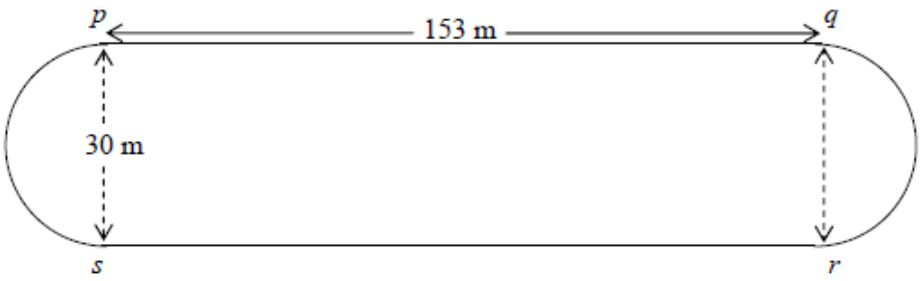
(i) Calculate, in cm, the radius of the bicycle wheel.

(ii) Taking π as 3·142 calculate, in cm, the circumference of the bicycle wheel.

(iii) How far does the bicycle travel when the wheel makes 340 complete turns? Give your answer to the nearest metre.

Q1 Part (c) 2008 Paper 2

1 (c) An athletics track has two equal parallel sides $[pq]$ and $[sr]$ and two equal semi-circular ends with diameters $[ps]$ and $[qr]$.
$|pq| = |sr| = 153$ metres, and $|ps| = |qr| = 30$ metres.



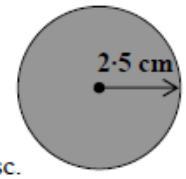
(i) Taking π as $3{\cdot}14$, calculate the length of one of the semi-circular ends, correct to the nearest metre.

(ii) Calculate the total length of one lap of the track, correct to the nearest metre.

(iii) Noirín ran a 5000 metre race on the above track in 15 minutes. Calculate, in seconds, the average time it took Noirín to complete one lap of the track during that race.

Q2 Part (a) 2008 Paper 2

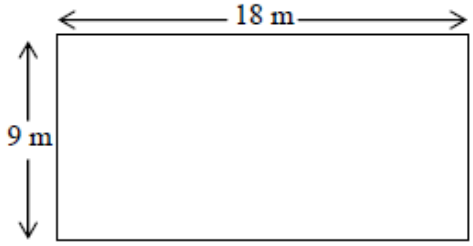
2. **(a)** A disc has a radius of 2·5 cm.



Taking π as 3·14, calculate, in cm^2, the area of the disc.

Q2 Part (b) 2008 Paper 2

2(b) A rectangular garden has measurements as shown.

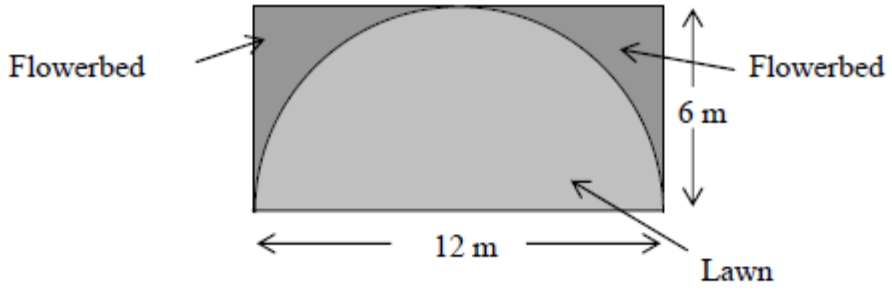


(i) Find, in m^2, the area of the garden.

(ii) The garden is to be covered completely with square concrete slabs each of side 50 cm.
Find the number of slabs required to cover the garden.

Q1 Part (c) 2007 Paper 2

1 (c) A garden with a semicircular lawn and two flowerbeds has measurements as shown in the diagram.



(i) Find, in m^2, the area of the garden.

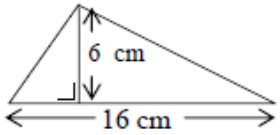
(ii) Taking π as 3·14, find the area of the lawn, in m^2.

(iii) Find the area of the flowerbeds, in m^2.

(iv) Taking π as 3·14, find the total perimeter of the semicircular lawn, in m.

Q2 Part (a) 2007 Paper 2

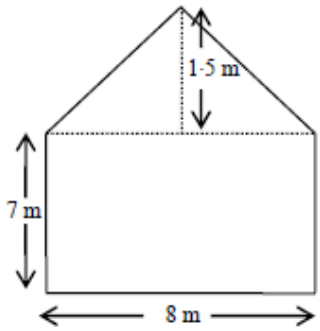
2. (a) A triangle has measurements as shown in the diagram.



Find, in cm^2, the area of the triangle.

Q1 Part (b) 2006 Paper 2

1(b) The gable-end of a house has measurements as shown in the diagram



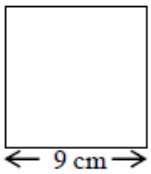
(i) Find, in m^2, the area of the bottom rectangular section of the gable-end.

(ii) Find, in m^2, the area of the top triangular section of the gable-end.

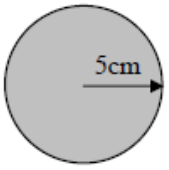
(iii) The cost of 5 litres of paint is €23.
5 litres of this paint will cover an area of $31m^2$.
Find the cost of painting the gable-end with this paint.

Q2 Part (a) 2006 Paper 2

2. **(a)** The length of each side of a square tile is 9 cm.
What area, in cm^2, will 12 of these tiles cover?



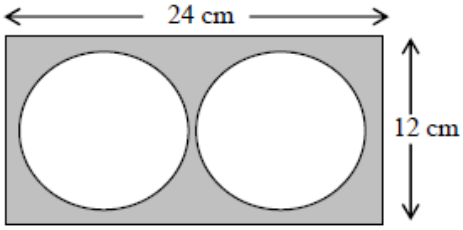
Q2 Part (b) 2006 Paper 2



2(b) **(i)** A circular disc has a radius of 5 cm.

Taking π as $3 \cdot 14$, find, in cm^2, the area of the disc.

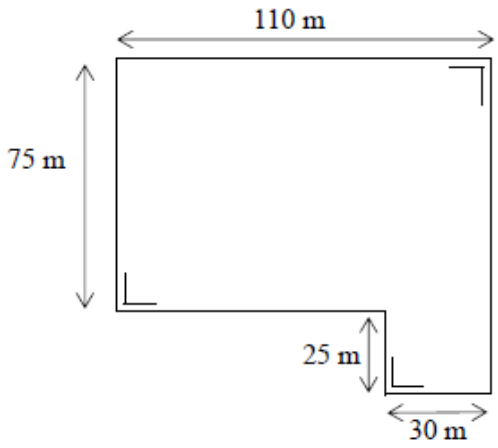
(ii) A rectangular piece of cardboard has measurements as shown.
Two circular pieces, each of radius length 5 cm, are cut out of this rectangular piece of cardboard as shown.



Find, in cm^2, the area of the remaining piece of cardboard.

Q1 Part (c) 2005 Paper 2

1 (c) A field has shape and measurements as shown in the diagram.



(i) Find, in metres, the length of the perimeter of the field.

(ii) Find, in m^2, the area of the field.

(iii) Mary bought the field at a cost of €20 000 per hectare.
How much did Mary pay for the field?

Q2 Part (b) 2005 Paper 2

2(b) The front wheel of a bicycle has a diameter of 56 cm.

(i) Calculate, in cm, the length of the radius of the wheel.

(ii) Calculate, in cm, the length of the circumference of the wheel.
Take π as $\frac{22}{7}$.

(iii) How far does the bicycle travel when the wheel makes 250 complete turns?
Give your answer in metres.