# OCR 10 Mensuration (Foundation)

1. A driver is paid at a rate of £9.20 an hour. One week she earns £322.00.

How many hours did she work that week?

1. Calculate the circumference of a circle with diameter 4.5 cm.
2. Work out the bearing of B from A.

N

**Not to scale**

A

50°

B

1. Calculate the area of this triangle.

**Not to scale**

5 cm

5 cm

7.1 cm

1. . Find *x*.
2. Calculate *L*.

**Not to scale**

*L*

3.2cm

2.4 cm

1. A map has a scale of 1 : 750.

A road is 600 m long. How long will it be on the map?

1. The volume *V* of a sphere is given by the formula , where *r* is the sphere’s radius. Find the volume of a sphere with a radius of 12 cm.
2. Calculate *L.*

3.2cm

48°

**Not to scale**

 *L*

1. Calculate the surface area of a cuboid with side lengths 3.5 cm, 4 cm and 6.2 cm.
2. Fred uses Pythagoras’ theorem to find *B*.

3.9 cm

*B B*

**Not to scale**

1.7cm

He writes: 

so 

and cm to 2 decimal places.

Identify the mistake Fred has made and show how to find the correct answer.

1. Using the diagram below, show that tan 30° is equal to .

30°

**Not to scale**

2

1 *B*

1. The area of the isosceles triangle is twice the area of the rectangle.

Show that the length, *L*, of the rectangle is 4.5 cm.

6 cm *B*

**Not to scale**

2 cm

*L*

1. This shape is made of a parallelogram and a circle.

Show that the shaded area is m2.

5 m

**Not to scale**

3 m

1. This shape is made from three regular hexagons joined together, each of side length 1.5 m.

Daljit calculates the perimeter of the shape to be m.

Explain what Daljit has done wrong.



**Not to scale**

1. Each wheel on a bicycle has a diameter of 0.622 m.

Write an expression for the number of turns each wheel will make if the bike travels *x* m.

1. Anne makes a model of her horse, shown below.

She has used a scale of 1 : 19. How tall is the real horse in metres?



8 cm

1. The density of water is 1000 kg per m3. A water tank has a capacity of 8 m3.

Calculate the weight of water in the tank when it is half full.

1. The minute hand on a tower clock is 4.2 m long.

How far in metres does the end of the minute hand travel in 5 minutes?

1. Two vertical posts of height 12 m and height 18 m are erected 24 m apart.

Find the distance between the top of the two posts.

**Not to scale**

18m

12m

24 m

### Answers

1. 35
2. 14.1 cm
3. 230°
4. 12.5 cm2
5. 53.1°
6. 

cm

1. m or 80 cm
2. cm3 or cm3
3. cm
4. 

cm2

1. 

Correct answer is cm to 2 dp

1. Adjacent side 



Rationalising the denominator gives .

1. Area of triangle cm2.

Area of rectangle area of triangle cm2.

cm.

1. Area of parallelogram m2

Area of circle m2

Shaded area m2

1. Daljit has included the sides inside the shape. The correct answer is 21 m.
2. 
3. cm m
4. Weight kg
5. m or m
6. 

m

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| **Assessment Objective** | **Qu.** | **Topic** | **R** | **A** | **G** |  | **Assessment Objective** | **Qu.** | **Topic** | **R** | **A** | **G** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AO1 | 1 | Use simple compound units |  |  |  |  | AO1 | 1 | Use simple compound units |  |  |  |
| AO1 | 2 | Know and apply the formula for circumference of a circle |  |  |  |  | AO1 | 2 | Know and apply the formula for circumference of a circle |  |  |  |
| AO1 | 3 | Work with bearings |  |  |  |  | AO1 | 3 | Work with bearings |  |  |  |
| AO1 | 4 | Know and apply the formula for area of a triangle |  |  |  |  | AO1 | 4 | Know and apply the formula for area of a triangle |  |  |  |
| AO1 | 5 | Know and apply trigonometric ratios in a right-angled triangle |  |  |  |  | AO1 | 5 | Know and apply trigonometric ratios in a right-angled triangle |  |  |  |
| AO1 | 6 | Know and apply Pythagoras’ theorem |  |  |  |  | AO1 | 6 | Know and apply Pythagoras’ theorem |  |  |  |
| AO1 | 7 | Use the scale of a map |  |  |  |  | AO1 | 7 | Use the scale of a map |  |  |  |
| AO1 | 8 | Calculate volume of sphere |  |  |  |  | AO1 | 8 | Calculate volume of sphere |  |  |  |
| AO1 | 9 | Know and apply trigonometric ratios to find a length |  |  |  |  | AO1 | 9 | Know and apply trigonometric ratios to find a length |  |  |  |
| AO1 | 10 | Calculate surface area of a cuboid |  |  |  |  | AO1 | 10 | Calculate surface area of a cuboid |  |  |  |
| AO2 | 11 | Know and apply Pythagoras’ theorem |  |  |  |  | AO2 | 11 | Know and apply Pythagoras’ theorem |  |  |  |
| AO2 | 12 | Know and apply Pythagoras’ theorem and trigonometric ratios |  |  |  |  | AO2 | 12 | Know and apply Pythagoras’ theorem and trigonometric ratios |  |  |  |
| AO2 | 13 | Find a dimension given the area |  |  |  |  | AO2 | 13 | Find a dimension given the area |  |  |  |
| AO2 | 14 | Find area of composite shapes |  |  |  |  | AO2 | 14 | Find area of composite shapes |  |  |  |
| AO2 | 15 | Find perimeter of composite shapes |  |  |  |  | AO2 | 15 | Find perimeter of composite shapes |  |  |  |
| AO3 | 16 | Use standard units of measurement in algebraic context |  |  |  |  | AO3 | 16 | Use standard units of measurement in algebraic context |  |  |  |
| AO3 | 17 | Interpret a scale drawing |  |  |  |  | AO3 | 17 | Interpret a scale drawing |  |  |  |
| AO3 | 18 | Apply formula: density  mass ÷ volume |  |  |  |  | AO3 | 18 | Apply formula: density  mass ÷ volume |  |  |  |
| AO3 | 19 | Calculate a length of a sector given angle and radius |  |  |  |  | AO3 | 19 | Calculate a length of a sector given angle and radius |  |  |  |
| AO3 | 20 | Know and apply Pythagoras’ theorem |  |  |  |  | AO3 | 20 | Know and apply Pythagoras’ theorem |  |  |  |