# 868

**868TUTORS**

# TUTORS

*Preparation for*

# High School Mathematics

## Measurement III

### Math

Student Name: _____

Student ID: _____

Date: _ _ / _ _ / _ _ _ _

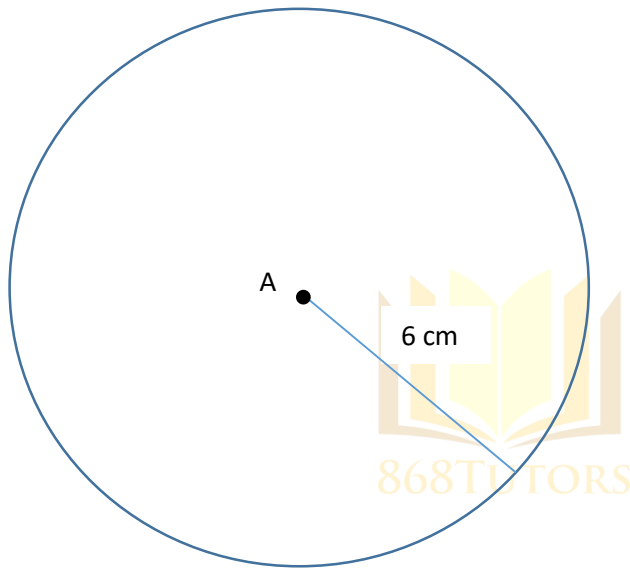**Total Score:**

**Highest Score:**

**Tutor's Comments:**

## *Question 1*

**Consider the circle below with centre A and a radius of 6 cm:**

**Use π = 3.14**

**(Diagram not drawn to scale)**



**(a) Calculate the area of the circle.**

**(2 marks)**

**(b) Calculate the circumference of the circle.**

**(2 marks)**

### Question 2

Use π = 3.14

(a) Calculate the area of a circle of diameter 5 m.

**(2 marks)**

(b) Calculate the circumference of a circle of diameter 6 m.

**(2 marks)**

(c) A circle has an area of 49 m$^2$. Calculate the diameter of the circle.

**(2 marks)**

### *Question 3*

**Consider the rectangle below:**

**(Diagram not drawn to scale)**

5 cm

9 cm

**(a) Calculate the perimeter of the rectangle.**

**(1 mark)**

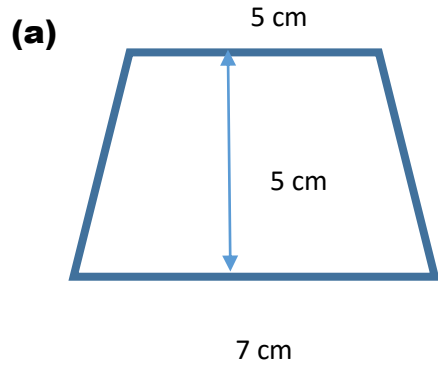**(b) Calculate the area of the rectangle.**

**(1 mark)**

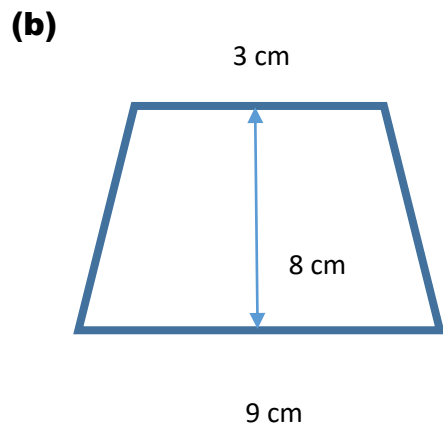**(c) A square has an area of 144 $m^2$. Determine the length of the side of the square.**

**(1 mark)**

## _Question 4_

**Calculate the area of each trapezium shown:**
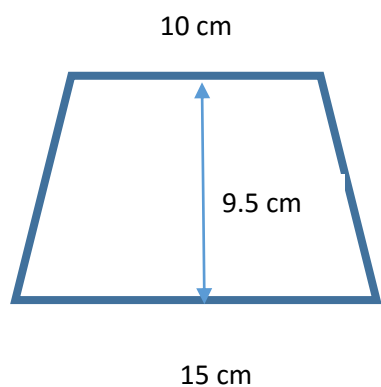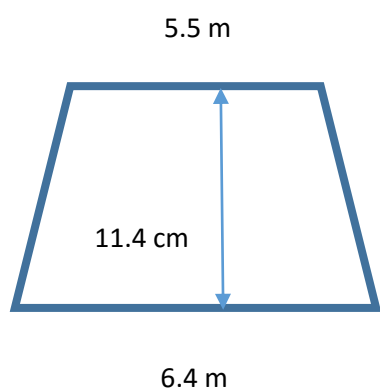
**(Diagrams not drawn to scale)**

**(a)**

5 cm

5 cm

7 cm

**(2 marks)**

**(b)**

3 cm

8 cm

9 cm

**(2 marks)**

**(c)**

10 cm

9.5 cm

15 cm

**(2 marks)**

**(d)**
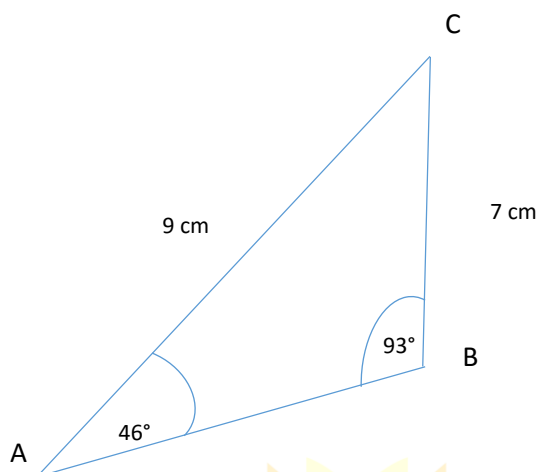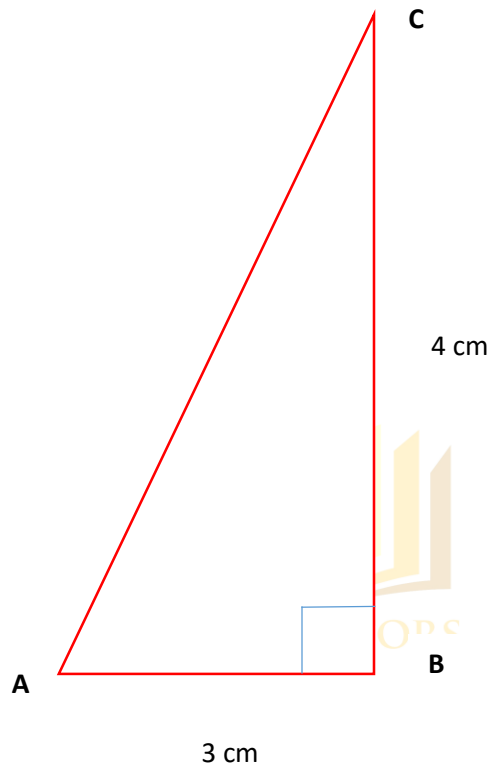
5.5 m

11.4 cm

6.4 m

**(2 marks)**

## Question 5

**Calculate the area of the triangle with the given dimensions.**
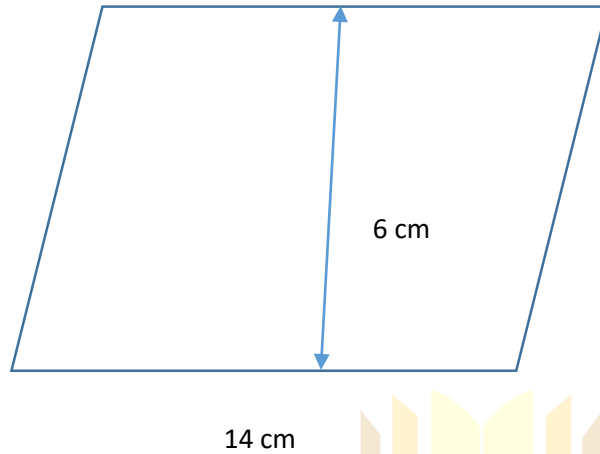
**(Diagram not drawn to scale)**



**(2 marks)**

## Question 6

**Calculate the area of the triangle with the given dimensions.**

**(Diagram not drawn to scale)**

C

4 cm

A

B

3 cm

**(2 marks)**

## *Question 7*

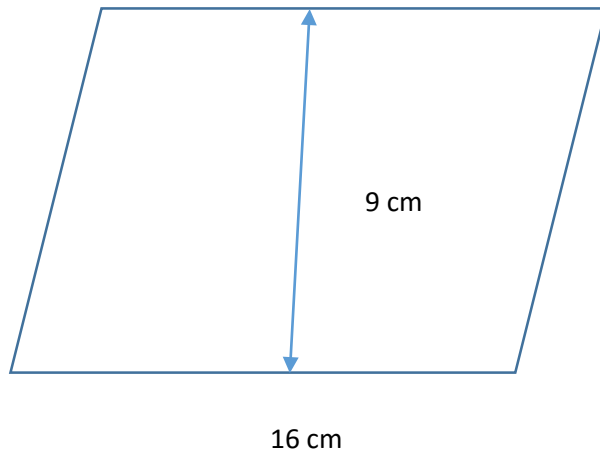**Calculate the area of the parallelograms with the given dimensions:**

**(Diagrams not drawn to scale)**
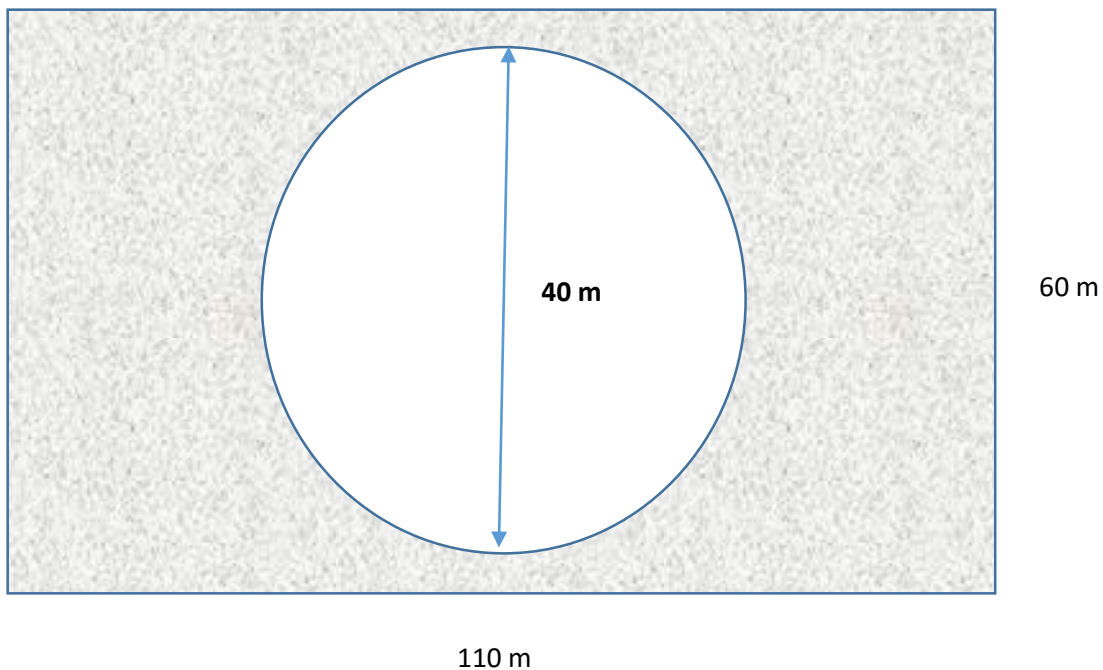
**(a)**

6 cm

14 cm

**(2 marks)**

**(b)**

9 cm

16 cm

**(2 marks)**

## Question 8

Consider a circle inside of a rectangle. The circle has a diameter of 40 m.

Use π = 3.14

(Diagram not drawn to scale)

**40 m**

60 m

110 m

Calculate the area of the shaded region.
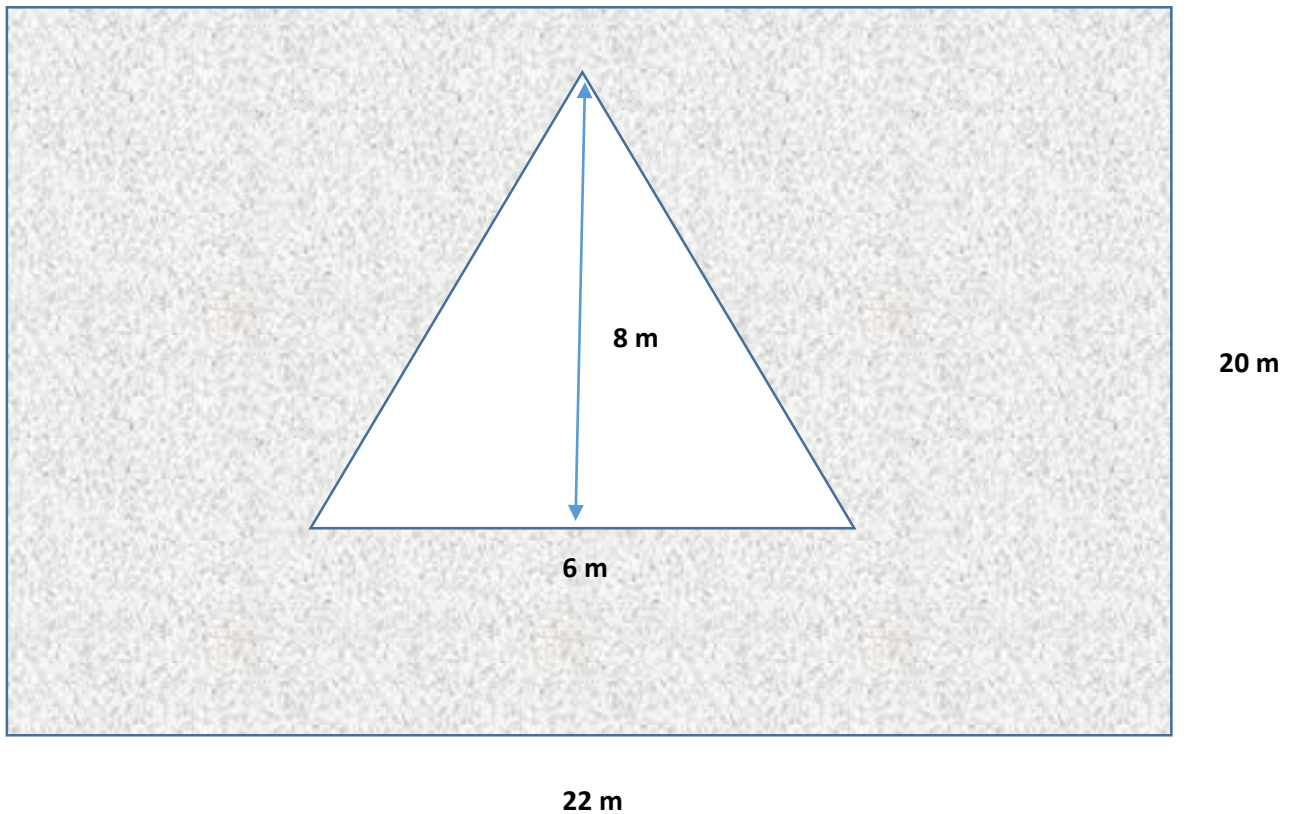
**(5 marks)**

### Question 9

Consider a triangle inside of a rectangle.

The triangle has a base of 6 m and a height of 8 m.

(Diagram not drawn to scale)

**8 m**

**20 m**

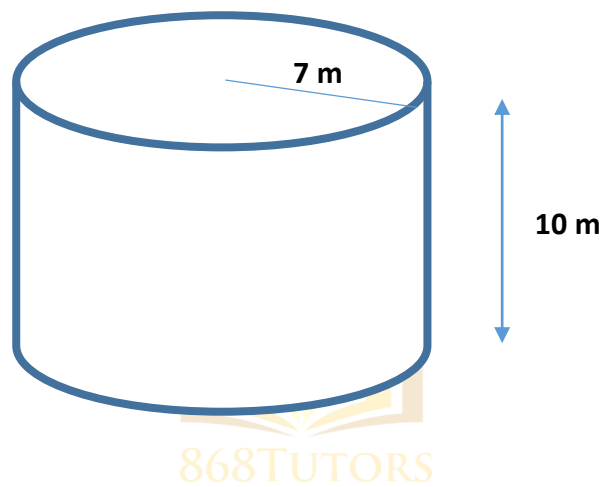**6 m**

**22 m**

Calculate the area of the shaded region.

**(5 marks)**

### Question 10

Consider the cylindrically shaped tank below.  The radius of the circle that forms part of the tank is 7 m. The height of the tank is 10 m.

Use π = 3.14

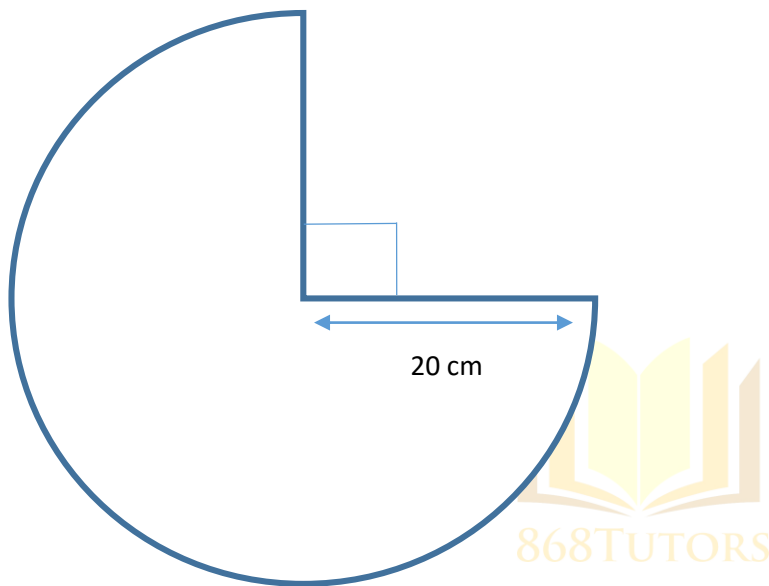(Diagram not drawn to scale)



(a) Calculate the volume of the tank.

**(5 marks)**

**Question 11**

Consider the major circle sector with a sector angle of $270°$ and a radius of 20 cm.

Use π = 3.14

(Diagram not drawn to scale)

20 cm

(a) Calculate the area of the major sector.

**(2 marks)**

(b) Calculate the perimeter of the major sector.

**(2 marks)**

**_Question 12_**

**Use π = 3.14**

**(a) Calculate the volume of a pyramid with a base of 20 m$^2$ and a
height of 5 m.**

**(2 marks)**

**(b) Calculate the volume of a sphere that has a radius of 200 m.**

**(3 marks)**

**(c) Calculate the radius of a sphere that has a volume of 300 m$^3$.**

**(2 marks)**

**(d) Calculate the surface area of a sphere that has a radius of 20 m.**

**(2 marks)**

**(e) A cone has a diameter of 30 cm and a vertical height of 64 cm. Calculate the volume of the cone.**

**(2 marks)**

**(f)  A cone has a volume of 320 cm$^3$. The cone has a height of 40 cm. Calculate the radius of the cone.**

**(2 marks)**

**END OF WORKSHEET**