

## Topic 7 Measures and bounds (Post-TT) [32]

1.

$$\text{Pressure} = \frac{\text{force}}{\text{area}}$$

Find the pressure exerted by a force of 900 newtons on an area of  $60 \text{ cm}^2$ .  
Give your answer in newtons/ $\text{m}^2$ .

(Total 2 marks)

2.

Jim rounds a number,  $x$ , to one decimal place.  
The result is 7.2

Write down the error interval for  $x$ .

(Total 2 marks)

3.

Use approximations to estimate the value of  $\frac{37.48 \times 6.13}{(1.95)^2}$

You **must** show your working.

(Total 3 marks)

4.

Circle the area that is the same as  $5.5 \text{ m}^2$

[1 mark]

$550 \text{ cm}^2$

$5\,500 \text{ cm}^2$

$55\,000 \text{ cm}^2$

$5\,500\,000 \text{ cm}^2$

5.

Packets of biscuits weigh 350 grams each.  
This weight is correct to the nearest 10 grams.

What are the maximum weight and the minimum weight of six packets?

(Total 3 marks)

6.

(a) Use your calculator to work out  $19.42^2 - \sqrt[3]{1006} \div 4.95$

Write down your full calculator display.

[1 mark]

(b) Use approximations to check that your answer to part (a) is sensible.

You **must** show your working.

[2 marks]

7.

A field is 50 m in width and 110 m in length.

The width is given correct to the nearest 5 metres.

The length is given correct to the nearest 10 metres.

Find the maximum area of the field.

(Total 4 marks)

8. Non-calculator

Find an approximate value of  $\frac{296 \times 8.13}{0.39}$

You **must** show all your working.

(Total 3 marks)

9.

Some boxes are to be loaded into a van.

Each box measures exactly 40 cm by 30 cm by 50 cm.

Each box weighs 40 kg, correct to the **nearest kilogram**.

The loading space in the van measures exactly 110 cm by 90 cm by 180 cm.

The maximum total weight of the boxes that can be loaded into the van is 890 kg, correct to the **nearest 10 kilograms**.

Work out the maximum number of boxes that can be loaded into the van without exceeding the weight limit.

Show clearly how you worked out your answer.

(Total 5 marks)

10.

An alloy is made from  $28 \text{ cm}^3$  of copper and  $41 \text{ cm}^3$  of gold.

The density of copper is  $9 \text{ g/cm}^3$ .

The density of gold is  $19 \text{ g/cm}^3$ .

(a) Work out the mass of copper used.

(b) Work out the density of the alloy.

(Total 6 marks)