

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

1.

Find an approximate value of

$$\frac{391 \times 3.08}{0.613}$$

You **must** show all your working.

(Total 3 marks)

2.

A box exerts a force of 140 newtons on a table.

The pressure on the table is 35 newtons/m².

Calculate the area of the box that is in contact with the table.

$$p = \frac{F}{A}$$

p = pressure

F = force

A = area

(Total 3 marks)

3.

Hannah's race time, t seconds, was recorded as 53.48, correct to 2 decimal places.

Complete the error interval for Hannah's race time.

$$\dots\dots\dots \leq t < \dots\dots\dots [2]$$

4.

Work out an estimate for $\sqrt{4.98 + 2.16 \times 7.35}$

(Total 3 marks)

5.

One sheet of A3 card has area $\frac{1}{8}$ m².

The card has a mass of 160 g per m².

Work out the total mass of 25 sheets of A3 card.

(Total 4 marks)

6.

A book weighs 3.2 kg, given to the nearest 100 g.

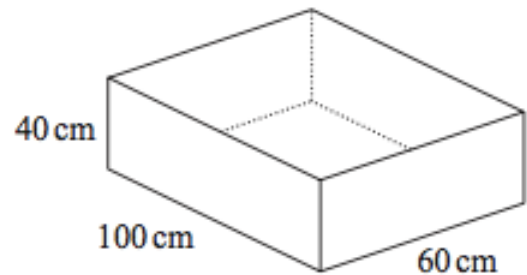
Find the minimum possible weight of 6 copies of the same book.

(Total 2 marks)

7.

The diagram shows a sand pit.
The sand pit is in the shape of a cuboid.

Sally wants to fill the sand pit with sand.
A bag of sand costs £2.50
There are 8 litres of sand in each bag.



Sally says,
“The sand will cost less than £70”

Show that Sally is wrong.

(Total 5 marks)

8.

$$D = \frac{x}{y}$$

$x = 99.7$ correct to 1 decimal place.
 $y = 67$ correct to 2 significant figures.

Work out an upper bound for D .

(Total 3 marks)

9.

Zahra mixes 150 g of metal A and 150 g of metal B to make 300 g of an alloy.

Metal A has a density of 19.3 g/cm^3 .

Metal B has a density of 8.9 g/cm^3 .

Work out the density of the alloy.

(Total 4 marks)

10.

Safety rules on a campsite require Sarah to set up her barbecue at least 4 m from her tent.
She decides to measure this distance using her stride length.
Sarah knows that her stride length is 0.8 m, rounded to the nearest 0.1 m.

Find the minimum number of strides Sarah will need to take to **guarantee** that her barbecue is a safe distance from her tent.

(Total 3 marks)