7. Square tiles are manufactured. The length of each tile is 300mm, measured correct to the nearest millimetre.

(a) Write down the least and greatest possible values of the length of the tile.

Least length ..... mm Greatest length ..... mm

[2]

(b) The distance between two walls in a passageway is 302 cm, measured correct to the nearest centimetre.
The tiles are laid end to end between the walls. Explain, showing all your calculations and reasoning, why it is always possible to lay 10 tiles between the walls.

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[5]

7. Concrete blocks have a mass of 15 kg measured to the nearest kg.

(a) Write down the least and greatest possible values of the mass of a concrete block.

Least mass ..... kg Greatest mass ..... kg

[2]

(b) (i) Find the least and greatest possible values of the mass of 100 concrete blocks.

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Least mass ..... kg of 100 blocks

Greatest mass ..... kg of 100 blocks

[2]

(ii) Denver wishes to be sure that he puts no more than 1500 kg of blocks on his lorry. Find the greatest number of blocks Denver should put on his lorry in order to be sure that no more than 1500 kg is loaded.

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[3]

8. Each of the following quantities has a particular number of dimensions. Give the number of dimensions of **each** quantity. The first one has been done for you.

Quantity	**Number of dimensions**
The capacity of a bucket	3
The area of a rectangle	
The volume of a cone	
The distance between Wrexham and Pembroke	
The circumference of a circle	

[2]

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7. Explain why the size of each of the exterior angles of a regular polygon cannot be 50°.

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[2]

8. A jug has a volume of 500 cm^3, measured to the nearest 10 cm^3.

(a) Write down the least and greatest possible values of the volume of the jug.

Least volume ..... cm^3 Greatest volume ..... cm^3

[2]

Water is poured from the jug into a tank of volume 15·5 litres measured to the nearest 0·1 litre.

(b) Explain, showing all your calculations, why it is always possible to pour water from 30 full jugs into the tank without overflowing.

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[5]