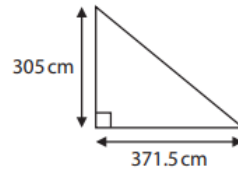


## Functional Skills Maths | Level 2

### Calculator Long Question Scaffolded Paper 2

1.

George will cover part of a floor with tiles.  
The part of the floor is in the shape of a triangle as shown.



George buys tiles in packs.  
Each pack covers  $1 \text{ m}^2$  and costs £39.95

The tiles can be cut and joined.  
George gets  $\frac{1}{3}$  off the cost of the packs of tiles.

Work out the lowest cost of the tiles for George.

(5)

a. Convert the measurements of the triangle to metres.

b. Calculate the area of the triangle in  $\text{m}^2$ .

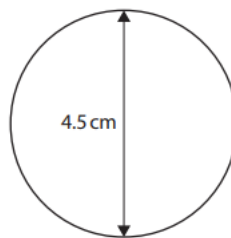
c. Work out how many packs of tiles George needs.

d. Work out the cost of a pack of tiles with the discount.

e. Work out the total cost of the tiles.

2.

Claire is a designer.  
She needs to put some lights around a circular bandstand in a park.  
Claire has this scale diagram of the plan view of the bandstand.



scale 1 : 200

Claire knows that

- a set of lights is 4.75 m in length
- each set of lights costs £27.99

Work out the total cost for the sets of lights Claire needs.

(5)

a. What is the formula for the circumference of a circle?

b. Use the formula to find the circumference of the circle.

c. Using the scale, find the actual circumference of the circle.

d. Using the length of a pack of lights, work out how many packs will be needed.

e. Work out the total cost of the lights.

3.

Jim owns a small business.

The table shows information about the weekly wage of the 40 workers.

Weekly wage (£)	Number of workers
320	10
370	13
420	8
470	7
520	2

Jim wants to increase the mean wage by 4%, plus £10

Jim thinks the new mean weekly wage of these workers will be more than £415

Is Jim correct?

You **must** show your working.

(6)

- a. Work out the total combined weekly wage of the workers on £320. You **must** show your working.

- b. Work out the total combined weekly wage of the workers on £370. You **must** show your working.

- c. Work out the total combined weekly wage of the workers on £420. You **must** show your working.

- d. Work out the total combined weekly wage of the workers on £470. You **must** show your working.

- e. Work out the total combined weekly wage of the workers on £520. You **must** show your working.

- f. Work out the total combined weekly wage of all the workers. You **must** show your working.

- g. Work out the current mean wage. You **must** show your working.

- h. Work out 4% of the current mean wage. You **must** show your working.

- i. Add the 4% and the additional £10 to the current mean wage. You **must** show your working.

- j. Is Jim correct? Show why you think this.

4.

Matt and Gabrielle are planning their wedding.  
There will be 150 people at the reception.

All of the tables at their reception

- seat a maximum of 8 people
- have a circular top of diameter 1.7 m

Matt and Gabrielle want to put ribbon around the top edge of each table.  
They will allow for an extra 65 cm of ribbon per table for a bow.

Ribbon is sold in rolls.  
Each roll of ribbon is 30 m in length.

How many rolls of ribbon do Matt and Gabrielle need to buy to decorate the minimum number of tables needed at their reception?

(5)

- a. Work out the minimum number of tables needed at the wedding.

b. Work out the circumference of one of the tables in metres.

c. Add the length of the circumference to the length of the bow to find the total amount of ribbon per table in metres.

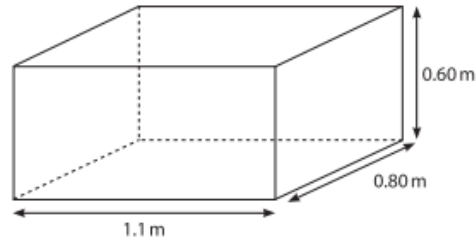
d. Work out the amount of ribbon needed for all the tables.

e. How many ribbon rolls will be needed?

5.

James has a contract to paint 30 identical water tanks.  
He has to paint the outside surfaces of each tank, but not the top.

Each surface is rectangular.



James knows that 1 tin of paint

- is enough to cover  $12\text{m}^2$  of surface
- costs £26.99

Work out the total cost of the tins of paint he will need for all 30 water tanks.

(6)

a. Work out the area of the front face of the water tank.

b. Multiply this by 2.

c. Work out the area of the side face of the water tank.



d. Multiply this by 2.

e. Work out the area of the base of the water tank.

f. Add all the sides together to find the total surface area (remember to NOT include the top).

g. Work out the surface area of all 30 water tanks.

h. Divide the total surface area by the coverage of a tin of paint to find out the number of tins needed.

- i. Work out the total price of the paint needed.