Questions

* The diagram shows the floor plan of a conservatory.

Diagram **NOT** accurately drawn
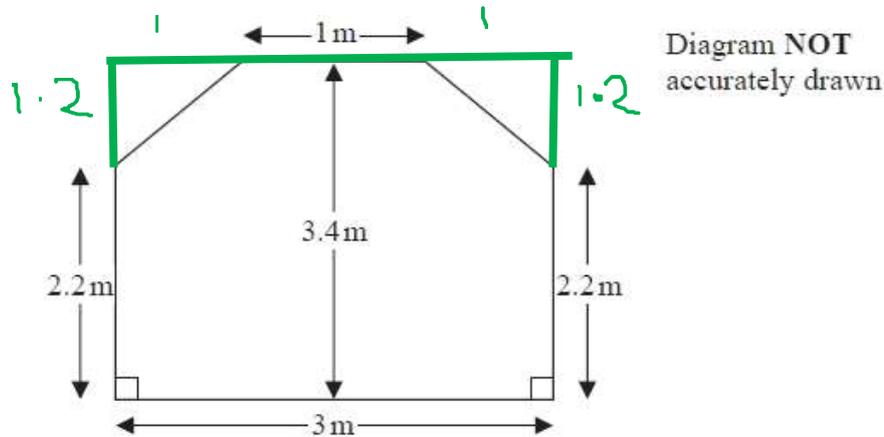
Nicole is going to cover the floor with tiles.

The tiles are sold in packs.
One pack of tiles will cover 2m^2
A pack of tiles normally costs £24.80
Mary gets a discount of 25% off the cost of the tiles.

Nicole has £100

Does she have enough money to buy all the tiles she needs?
You must show all your working.

$\square$ Area $= 3 \times 3.4 = 10.2 \, m^2$

$\triangleright = 1 \times 1.2 \div 2 = 0.6 \, m^2$

Floor area $= 10.2 - 2 \times 0.6 = 9 \, m^2$

Packs needed $= 9 \div 2 = 4.5$

must buy 5 packs

Cost $5 \times 24.80 = £124.00$

Discount $£124 \times 0.25 = £31.00$

Final cost $124 - 31$
$= £93$

Yes she has enough money.

(Total for question = 5 marks)

* The diagram shows the plan of a floor.

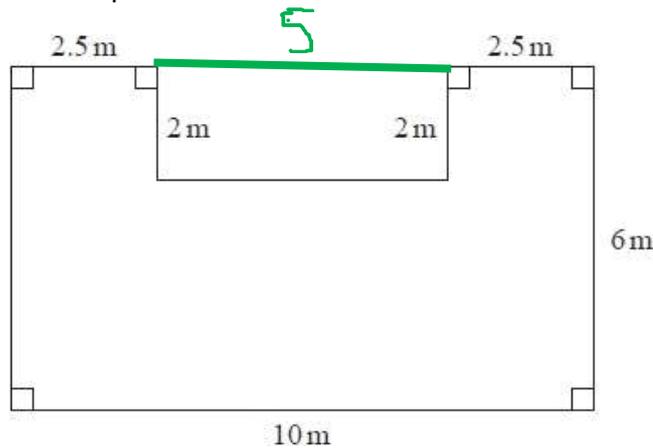2.5 m   5   2.5 m

2 m   2 m

Diagram **NOT** accurately drawn

6 m

10 m

Sophia is going to varnish the floor.

She needs 1 litre of varnish for 5 m² of floor.
There are 2.5 litres of varnish in each tin of varnish.

Sophia has 3 tins of varnish.

Does she have enough varnish for all the floor?
You must show all your working.

Area $= 10 \times 6 = 60 \, m^2$

Area $= 5 \times 2 = 10 \, m^2$

Floor Area $= 60 - 10 = 50 \, m^2$
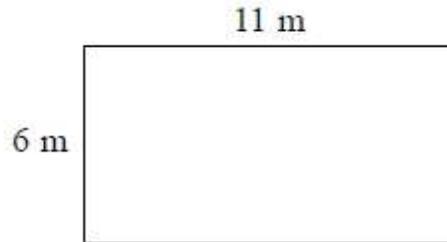
1 litre $= 5 \, m^2$

1 tin (2·5 litres) $= 12·5 \, m^2$

Tins needed $= 50 \div 12·5 = 4$

No she needs another tin.

(Total for question = 5 marks)

A tin of varnish costs £15

A rectangular floor has dimensions 6 m by 11 m.
The floor is going to be covered in varnish.

11 m

6 m

Irsa assumes that each tin of this varnish covers an area of 12 m^2.

(a) Using Irsa's assumption, work out the cost of buying the varnish for this floor.

$$area = 11 \times 6 = 66m^2$$

$$tins \ needed = 66 \div 12 = 5.5$$

must buy 6

$$6 \times 15 =$$

£ 90

(4)

Irsa finds that each tin of varnish covers less than 12 m^2.

(b) Explain how this might affect the number of tins she needs to buy.

She may need more tins

(1)

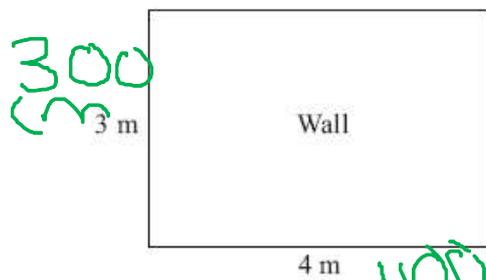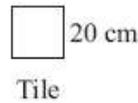**(Total for question = 5 marks)**

* Here is a diagram of a wall.

300 cm

3 m

Wall

4 m **400 cm**

Diagram **NOT** accurately drawn

20 cm

Tile

Halima wants to cover all of the wall with tiles.

The tiles are squares with sides of length 20 cm.

The tiles are sold in packs.
There are 10 tiles in each pack.
Each pack of tiles costs £34.99

Halima only has £1000

Can she buy enough packs of tiles to cover the wall?

Area of wall = $300 \times 400 = 120\,000\ cm^2$

tile = $20 \times 20 = 400\ cm^2$

No of tiles = $120\,000 \div 400 = 300$

No of packs = $300 \div 10 = 30$

Cost = $30 \times 34.99 = £1049.70$

No she has not enough money.

(Total for Question is 6 marks)
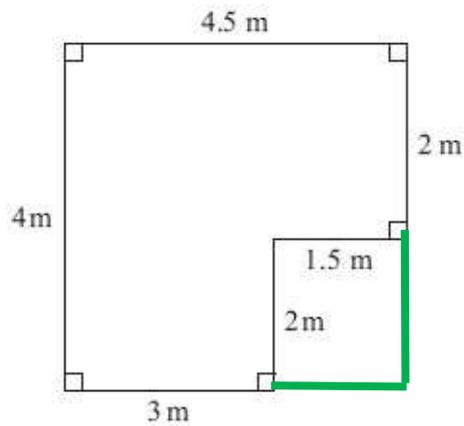
* The diagram shows the floor plan of a dining room.

4.5 m

2 m

Diagram **NOT**
accurately drawn

4m

1.5 m

2m

3 m

Sahil is going to cover the floor with wooden floorboards.

The floorboards are sold in packs.
One pack of floorboards will cover 2.25 m^2.

Work out how many packs Sahil needs.
You must show all your working.

$$4.5 \times 4 = 18 m^2$$

$$1.5 \times 2 = 3m^2$$

Area of floor $= 18 - 3 = 15m^2$

Packs needed $= 15 \div 2.25 = 6.67$

Need to buy 7

(Total for Question is 4 marks)

The diagram shows a patio in the shape of a rectangle.

3 m

300cm

Diagram **NOT**
accurately drawn

3.6 m   360cm
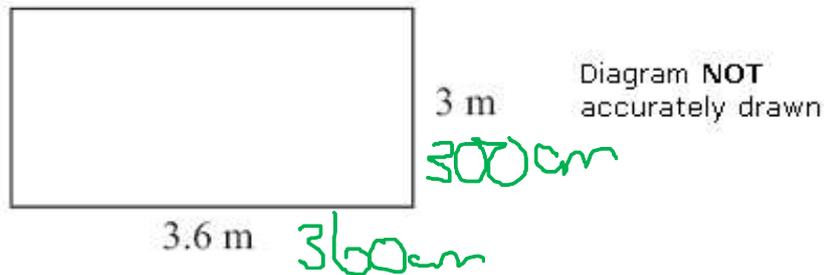
The patio is 3.6 m long and 3 m wide.

Nathaniel is going to cover the patio with paving slabs.
Each paving slab is a square of side 60 cm.

Nathaniel buys 32 of the paving slabs.

(a) Does he buy enough paving slabs to cover the patio?
You must show all your working.

Patio Area = 300 × 360 = 108 000

Slab area = 60 × 60 = 3600

Slabs needed = 108000 ÷ 3600 =

yes he does   30

(3)

The paving slabs cost £8.63 each.

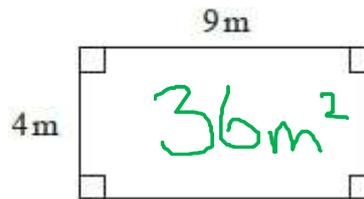(b) Work out the total cost of the 32 paving slabs.

Non Calculator

£ 276·16

(3)

(Total for Question is 6 marks)

Denisa has a garage.

Here is a plan of her garage floor.

9 m

4 m $36m^2$

Denisa wants to buy enough paint to cover the garage floor as cheaply as possible.
She can buy her paint from Decor U or from Paint Store.

Decor U
Floor paint

£3.70 each tin
1 tin covers 12 m²

Paint Store
Floor paint

£3.00 each tin
1 tin covers 10 m²

From which of these two shops should Denisa buy her paint?
You must show all your working.

$36 \div 12 = 3 \text{ tins}$

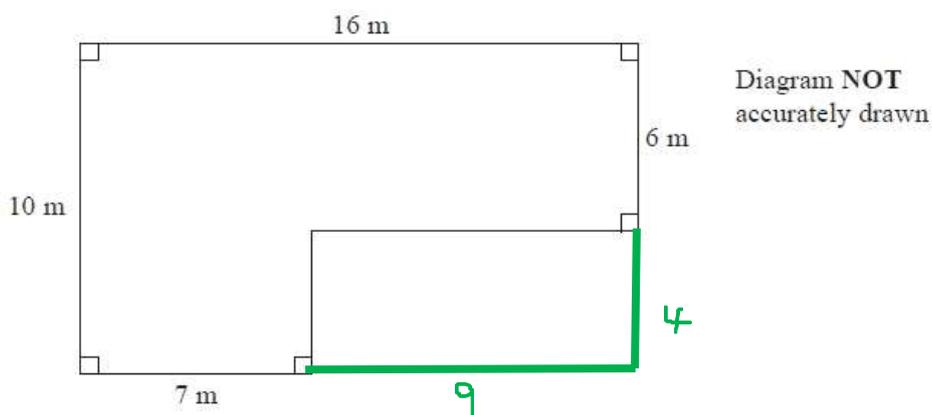3×3.70

$= £11.10$

$36 \div 10 = 3.6$

must buy 4

4×3.00

$= £12.00$

Buy from Decor U

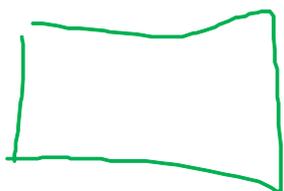**(Total for question = 4 marks)**

*The diagram shows the plan of a small field.

16 m

Diagram **NOT**
accurately drawn

6 m

10 m

4

7 m

9

Bailey is going to keep some pigs in the field.
Each pig needs an area of 36 square metres.

Work out the greatest number of pigs Bailey can keep in the field.

$16 \times 10 = 160$

$9 \times 4 = 36$

Field Area $= 160 - 36 = 124 \text{m}^2$

No of pigs $= 124 \div 36 = 3.44$

only 3 pigs can be kept.

(Total for Question is 4 marks)