

- 1** Victor buys 12 bottles of apple juice for a total cost of \$21  
Victor sells all 12 bottles at \$2.45 each bottle.

Work out Victor's percentage profit.

.....%

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**(Total for Question 1 is 3 marks)**

- 2** In London, 1 litre of petrol costs 108.9p  
In New York, 1 US gallon of petrol costs \$2.83

1 US gallon = 3.785 litres  
£1 = \$1.46

In which city is petrol better value for money, London or New York?  
You must show your working.

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**(Total for Question 2 is 3 marks)**

**3** Natalie makes potato cakes in a restaurant.

She mixes potato, cheese and onion so that

weight of potato : weight of cheese : weight of onion = 9 : 2 : 1

Natalie needs to make 6000 g of potato cakes.

Cheese costs £2.25 for 175 g.

Work out the cost of the cheese needed to make 6000 g of potato cakes.

£.....

**(Total for Question 3 is 4 marks)**

4 £360 is shared between Abby, Ben, Chloe and Denesh.

The ratio of the amount Abby gets to the amount Ben gets is 2 : 7

Chloe and Denesh each get 1.5 times the amount Abby gets.

Work out the amount of money that Ben gets.

£.....

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**(Total for Question 4 is 4 marks)**

**5** Sarah makes and sells mugs.

One day she makes 150 mugs.

Her total cost for making these mugs is £1140

Of these mugs

$\frac{2}{5}$  are small mugs

32% are medium mugs

and the rest are large mugs

Here is Sarah's price list for selling each mug.

MUGS	
Small	£8.50
Medium	£11.20
Large	£14.20

Sarah sells all 150 mugs.

Work out her percentage profit.

Give your answer correct to the nearest whole number.

.....%

**(Total for Question 5 is 5 marks)**

6 Mary saves for a holiday each year.

In 2020 she saved a total of \$720

In 2021, each month she saved \$78

The total amount Mary saved in 2021 was  $P\%$  more than the total she saved in 2020

(a) Work out the value of  $P$

Roberto is going to go on holiday.

He has two coupons that will save him money on his holiday.

**Coupon A**

18% off the cost of the  
accommodation

**Coupon B**

12.5% off the total cost of the  
accommodation **and** the flights

For Roberto's holiday

the cost of the accommodation is \$1600

the cost of the flights is \$800

Roberto can only use one of the coupons.

He wants to save as much money as he can.

- (b) Which of the two coupons, **A** or **B**, should he use?  
Show your working clearly.

(3)

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**(Total for Question 6 is 7 marks)**

7 Jo is going to buy 15 rolls of wallpaper.

Here is some information about the cost of rolls of wallpaper from each of two shops.

**Chic Decor**

3 rolls for £36

**Style Papers**

Pack of 5 rolls  
normal price £70

12% off the normal price

Jo wants to buy the 15 rolls of wallpaper as cheaply as possible.

Should Jo buy the wallpaper from Chic Decor or from Style Papers?

You must show how you get your answer.

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**(Total for Question 7 is 4 marks)**



**8** Raya buys a van for £8500 plus VAT at 20%

Raya pays a deposit for the van.

She then pays the rest of the cost in 12 equal payments of £531.25 each month.

Find the ratio of the deposit Raya pays to the total of the 12 equal payments.

Give your answer in its simplest form.

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(Total for Question 8 is 5 marks)

- 9** Alison buys 5 apples and 3 pears for a total cost of \$1.96  
Greg buys 3 apples and 2 pears for a total cost of \$1.22

Michael buys 10 apples and 10 pears.

Work out how much Michael pays for his 10 apples and 10 pears.  
Show your working clearly.

\$.....

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**(Total for Question 9 is 5 marks)**

- 10** A bonus of £2100 is shared by 10 people who work for a company.  
40% of the bonus is shared equally between 3 managers.  
The rest of the bonus is shared equally between 7 salesmen.

One of the salesmen says,

“If the bonus is shared equally between all 10 people I will get 25% more money.”

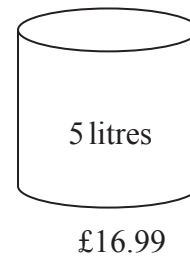
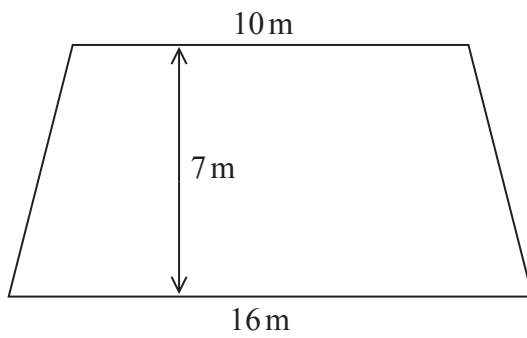
Is the salesman correct?

You must show how you get your answer.

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**(Total for Question 10 is 5 marks)**

- 11** The diagram shows a floor in the shape of a trapezium.



John is going to paint the floor.

Each 5 litre tin of paint costs £16.99  
1 litre of paint covers an area of  $2\text{ m}^2$

John has £160 to spend on paint.

Has John got enough money to buy all the paint he needs?  
You must show how you get your answer.

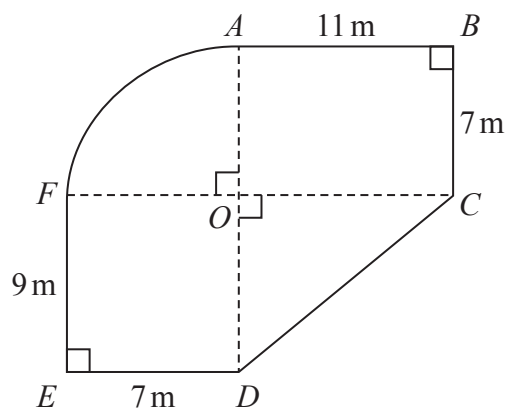
**(Total for Question 11 is 5 marks)**

**12** The diagram shows a plan of Jason's garden.

$ABCO$  and  $DEFO$  are rectangles.

$CDO$  is a right-angled triangle.

$AFO$  is a sector of a circle with centre  $O$  and angle  $AOF = 90^\circ$



Jason is going to cover his garden with grass seed.

Each bag of grass seed covers  $14 \text{ m}^2$  of garden.

Each bag of grass seed costs £10.95

Work out how much it will cost Jason to buy all the bags of grass seed he needs.

£.....

(Total for Question 12 is 5 marks)

**13** Markus makes a steel framework.

The framework is in the shape of the right-angled triangle  $ABC$  shown in the diagram.

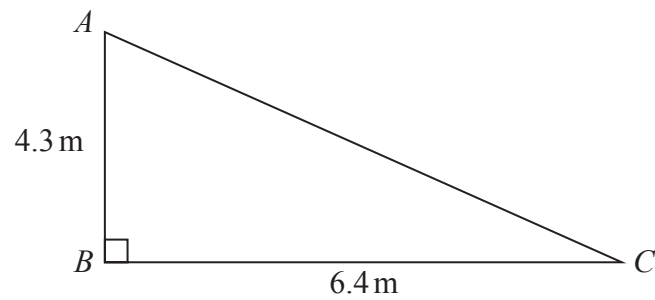


Diagram **NOT**  
accurately drawn

The steel that Markus uses costs \$22 per metre.

The steel can **only** be bought in a length that is a whole number of metres.

Work out the total cost of the steel that Markus buys in order to make the framework.

\$.....

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(Total for Question 13 is 4 marks)

**14** Jack and Sadia work for a company that sells boxes of breakfast cereal.

The company wants to have a special offer.

Here is Jack's idea for the special offer.

Put 25% more cereal into each box and do **not** change the price.

Here is Sadia's idea.

Reduce the price and do **not** change the amount of cereal in each box.

Sadia wants her idea to give the same value for money as Jack's idea.

By what percentage does she need to reduce the price?

..... %

**(Total for Question 14 is 3 marks)**

15 Antoine is going on holiday.  
He makes 3 separate payments to cover the total cost of his holiday.

The following table shows how much money Antoine pays to the holiday company.

Payment	Amount paid
Payment 1	$\frac{3}{8}$ of the total cost
Payment 2	45% of the total cost
Payment 3	\$406

Work out how much Antoine has to pay for Payment 2

\$ .....

(Total for Question 15 is 5 marks)



16 Jonty has a storage container in the shape of a cuboid, as shown in the diagram.

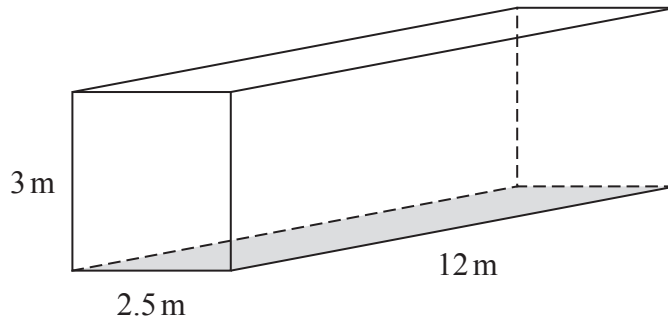


Diagram **NOT**  
accurately drawn

Jonty is going to paint the outside of his storage container, apart from the base which is shown shaded in the diagram.

He needs enough paint to cover the four sides and the top.

Each tin of paint covers an area of  $15 \text{ m}^2$

The cost of each tin of paint recently increased by 10%

**After** the increase, the cost of each tin of paint is £26.95

Jonty says

“**Before** the increase, I could have bought enough paint for less than £200”

Show that Jonty is correct.

Show your working clearly.

**(Total for Question 16 is 6 marks)**

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**17** Robert makes 50 litres of green paint by mixing litres of yellow paint and litres of blue paint in the ratio 2 : 3

Yellow paint is sold in 5 litre tins.  
Each tin of yellow paint costs £26

Blue paint is sold in 10 litre tins.  
Each tin of blue paint costs £48

Robert sells all the green paint he makes in 10 litre tins.  
He sells each tin of green paint for £66.96

Work out Robert's percentage profit on each tin of green paint he sells.

.....%

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**(Total for Question 17 is 5 marks)**

**18** Henry is thinking of having a water meter.

These are the two ways he can pay for the water he uses.

**Water Meter**

A charge of £28.20 per year

**plus**

91.22p for every cubic metre of water used

1 cubic metre = 1000 litres

**No Water Meter**

A charge of £107 per year

Henry uses an average of 180 litres of water each day.

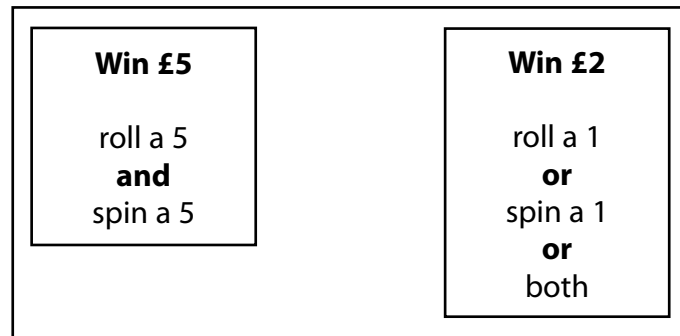
Use this information to determine whether or not Henry should have a water meter.

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**(Total for Question 18 is 5 marks)**

- 19** David has designed a game.  
He uses a fair 6-sided dice and a fair 5-sided spinner.  
The dice is numbered 1 to 6  
The spinner is numbered 1 to 5

Each player rolls the dice once and spins the spinner once.  
A player can win £5 or win £2



David expects 30 people will play his game.  
Each person will pay David £1 to play the game.

- (a) Work out how much profit David can expect to make.

£.....  
(4)

- (b) Give a reason why David's actual profit may be different to the profit he expects to make.

.....  
.....  
(1)

(Total for Question 19 is 5 marks)

**20** Divya and Yuan each pay for a holiday at a special offer price.

**Divya's holiday**

Normal price: \$1600

Special offer:  
16% off the normal price

**Yuan's holiday**

Normal price: \$1400

Special offer:  
 $k\%$  off the normal price

The amount that Divya pays is the same as the amount that Yuan pays.

Work out the value of  $k$

$k = \dots\dots\dots$

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**(Total for Question 20 is 4 marks)**