1 There are 30 children in a nursery school.
   At least 1 adult is needed for every 8 children in the nursery.

   (a) Work out the least number of adults needed in the nursery.

   ....

   (2)

   2 more children join the nursery.

   (b) Does this mean that more adults are needed in the nursery?
       You must give a reason for your answer.

   ....

   (1)

   (Total for Question   is 3 marks)

2 Here is a list of ingredients for making 16 flapjacks.

> **Ingredients for 16 flapjacks**
>
> 120 g butter
> 140 g brown sugar
> 250 g oats
> 2 tablespoons syrup

Jenny wants to make 24 flapjacks.

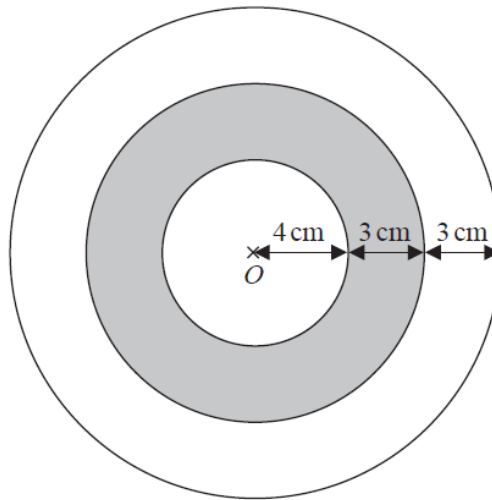Work out how much of each of the ingredients she needs.

butter .... g

brown sugar .... g

oats .... g

syrup .... tablespoons

(Total for Question   is 3 marks)

3   The diagram shows a logo made from three circles.

Each circle has centre O.

Daisy says that exactly $\dfrac{1}{3}$ of the logo is shaded.

Is Daisy correct?
You must show all your working.

(Total for Question   is 4 marks)

4   Gavin, Harry and Isabel each earn the same monthly salary.

Each month,

Gavin **saves** 28% of his salary and spends the rest of his salary

Harry spends $\dfrac{3}{4}$ of his salary and **saves** the rest of his salary

the amount of salary Isabel saves : the amount of salary she spends = 3 : 7

Work out who saves the most of their salary each month.
You must show how you get your answer.

(Total for Question   is 4 marks)

5 Here is the list of ingredients for making 30 biscuits.

> Ingredients for 30 biscuits
>
> 225 g butter
> 110 g caster sugar
> 275 g plain flour
> 75 g chocolate chips

Lucas has the following ingredients.

900 g butter
1000 g caster sugar
1000 g plain flour
225 g chocolate chips

What is the greatest number of biscuits Lucas can make?
You must show your working.

....

(Total for Question   is 3 marks)

6 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.

(Total for Question   is 5 marks)

7 Alan, Bispah and Chan share a sum of money.

Alan gets $\dfrac{1}{8}$ of the money.

Bispah gets $\dfrac{1}{2}$ of the money.

Chan gets the rest of the money.

Alan gets £2.50

(a) Work out how much money Bispah gets.

£...

(2)

(b) Find the ratio

amount of money Alan gets : amount of money Chan gets

Give your answer in the form $a:b$ where a and b are whole numbers.

....

(3)

(Total for Question   is 5 marks)

8 There are some counters in a bag.
The counters are red or white or blue or yellow.

Bob is going to take at random a counter from the bag.

The table shows each of the probabilities that the counter will be blue or will be yellow.

Colour	red	white	blue	yellow
Probability			0.45	0.25

There are 18 blue counters in the bag.

The probability that the counter Bob takes will be red is twice the probability that the counter will be white.

(a) Work out the number of red counters in the bag.

....

(4)

A marble is going to be taken at random from a box of marbles.
The probability that the marble will be silver is 0.5

There must be an even number of marbles in the box.

(b) Explain why.

....

....

(1)

(Total for Question   is 5 marks)

9 Shahid is going to use these instructions to make a fizzy drink.

> Mix 5 parts of orange juice
> with 2 parts of lemonade

Shahid thinks that he has 300 m*l* of orange juice and 200 m*l* of lemonade.

(a) If Shahid is correct, what is the greatest amount of fizzy drink he can make?

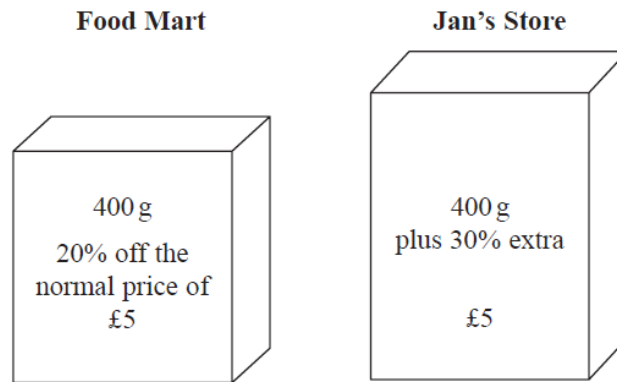... m*l*

(3)

Shahid has 300 m*l* of orange juice but he only has 160 m*l* of lemonade.

(b) Does this affect the greatest amount of fizzy drink he can make?
    Give a reason for your answer.

....

....

....

(1)

(Total for Question   is 4 marks)

10   Food Mart and Jan's Store sell boxes of the same type of breakfast cereal.

Each shop has a special offer.

Food Mart	**Jan's Store**
400 g	400 g
20% off the normal price of £5	plus 30% extra
	£5

Which box of cereal is the better value for money?
You must show your working.

(Total for Question   is 4 marks)

11 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.

(Total for Question   is 5 marks)

12 A shop sells compost in 20 litre bags and in 40 litre bags.
One day the shop had two special offers for the compost.

| 20 | | 40 |
| litres | | litres |

2 bags for £3.50   3 bags for £9

Which offer is the better value for money?
You must show how you get your answer.

(Total for Question   is 3 marks)

13 Here are the ingredients needed to make 16 biscuits.

Biscuits

Ingredients to make **16** biscuits

175 g of butter
75 g of sugar
250 g of flour

Anna has

500 g of butter
300 g of sugar
625 g of flour

Work out the greatest number of biscuits Anna can make.

....

(Total for Question   is 3 marks)

14 Here are the costs of the same type of batteries in two shops.

Shop **A**	Shop **B**
Pack of 4 batteries £1.60	Pack of 6 batteries £2.70

Harry needs to buy at least 30 batteries.
He assumes that he has to buy batteries in whole packs.
Harry wants to buy the batteries as cheaply as possible from the same shop.

(a) Which shop should he buy the batteries from, shop **A** or shop **B**?
You must show all your working.

(4)

Harry's assumption is wrong.
He can buy single batteries for 40p each in shop **A** and for 45p each in shop **B**.

(b) Does this affect which of these two shops Harry should buy the batteries from?
Give a reason for your answer.

....

....

....

(1)

(Total for Question   is 5 marks)