Instructions

1.

menu

burger	55p
egg	38p
chips	40p
mash	35p
cola	30p
milk	28p

(a) Rifat buys **egg**, **chips** and **milk**.

How much does she pay?

£ [   ]

1 mark

She pays with a **£5** note.

How much change should she get?

£ [   ]

1 mark

(b) George wants to buy **burger**, **mash** and **2 eggs**.
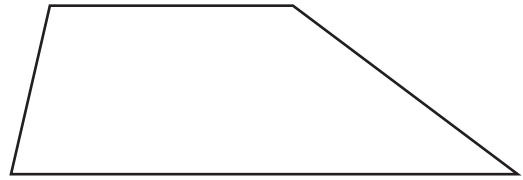He has **£1.50**

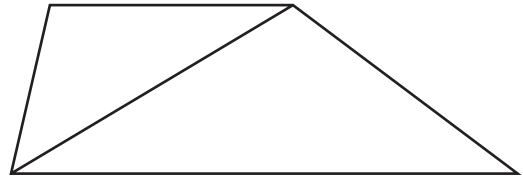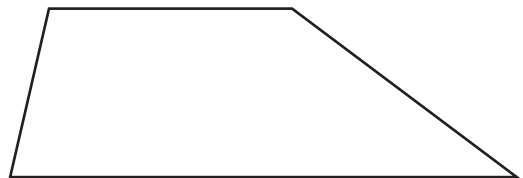How much **more money** does he need?

[   ] p

1 mark

2.   Look at this quadrilateral.

You can draw **one line** on the
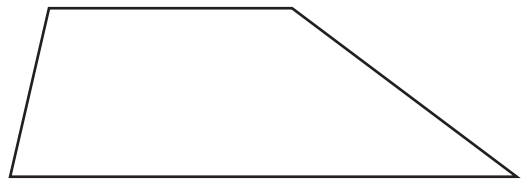quadrilateral to make **two triangles**.

(a)   Use a ruler to draw a line in a **different** place on
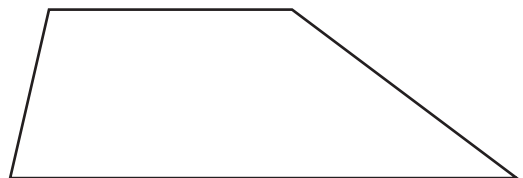the quadrilateral to make **two triangles**.

1 mark

(b)   Now draw **one line** on the quadrilateral
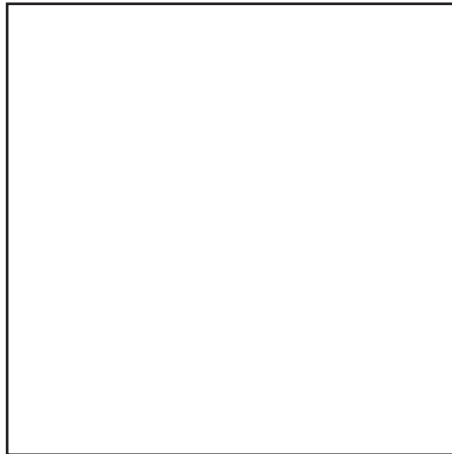to make a **quadrilateral and a triangle**.

1 mark

(c)   Now draw **one line** on the quadrilateral
to make **two quadrilaterals**.

1 mark

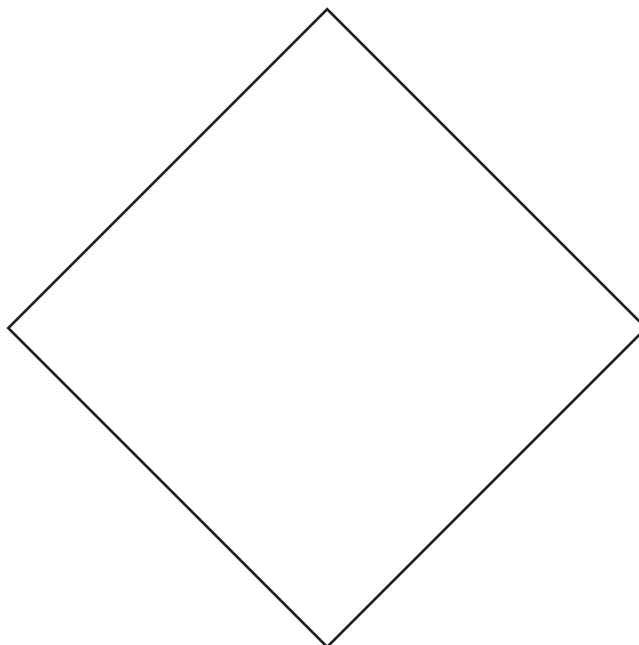(d) Draw **two lines** on the square below to make **four triangles** that are all the **same size**.

(e) Now draw **two lines** on the square below to make **four squares** that are all the **same size**.

Use a ruler and draw the squares accurately.

3.   Write down the answers.

(a)   Add 238 to 567, then subtract 143

. . . .

1 mark

(b)   Multiply 369 by 14, then add 834

. . . .

1 mark

(c)   Add 94 to half of 778

. . . .

1 mark

(d)   How much less than 1000 is 59×16 ?

. . . .

1 mark

4. The chart shows which factor sun cream is recommended for different places.

Type of skin	Warm UK		Hot Southern Europe		Very Hot The Tropics	
	first 3 days	after the first 3 days	first 3 days	after the first 3 days	first 3 days	after the first 3 days
fair	20	12	20	12	35	20
medium	16	8	20	12	20	12
dark	12	6	12	6	12	8

(a) Amy says:

> I have **dark** skin and I'm going to **The Tropics**.

What factor sun cream should she use **after the first 3 days**?

✎ . . . .

1 mark

(b) Eric says:

> The chart shows I must use factor **16** sun cream for my holiday.

Use the chart to answer the following questions.

Where might Eric be going on his holiday?

✎ . . . .

1 mark

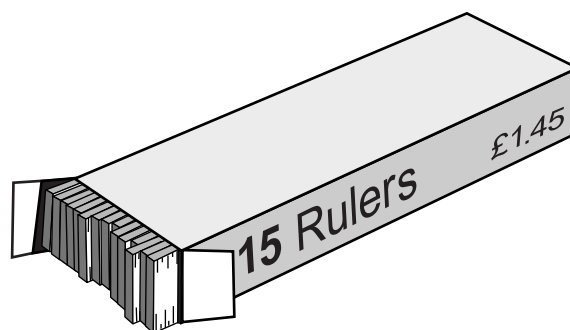What type of skin does Eric have?

✎ . . . .

1 mark

5. There are **15 rulers** in a box.

A box of rulers costs **£1.45**

(a) How many rulers are there in **8 boxes**?

. . . . rulers

(b) How much do **8 boxes** cost?
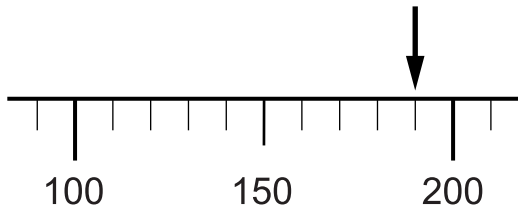
£

(c) How much do **30 rulers** cost?

£

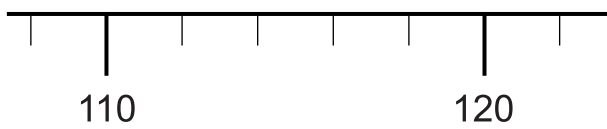(d) How many boxes of rulers could you buy for **£7.25**?

. . . . boxes

6. (a)   What number is the arrow pointing to on this scale?

The number is . . . .

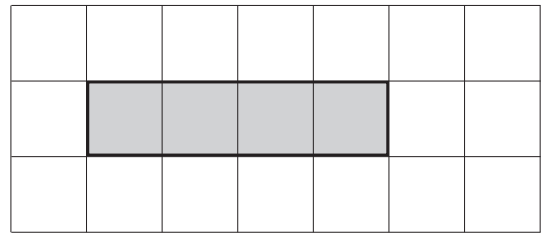(b)   Draw an arrow on the scale below to show the number **112**

7. The shaded rectangle has

an **area** of **4cm²**
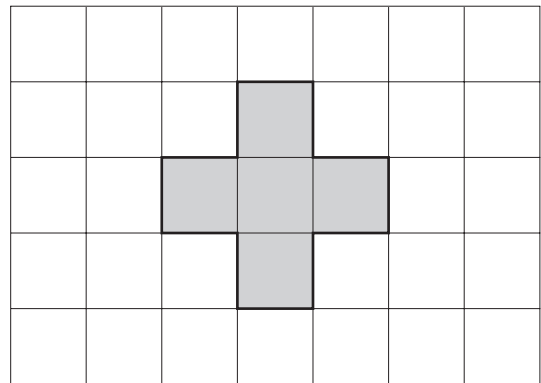
and a **perimeter** of **10cm**.

(a) Look at the cross-shape.

Fill in the gaps below.
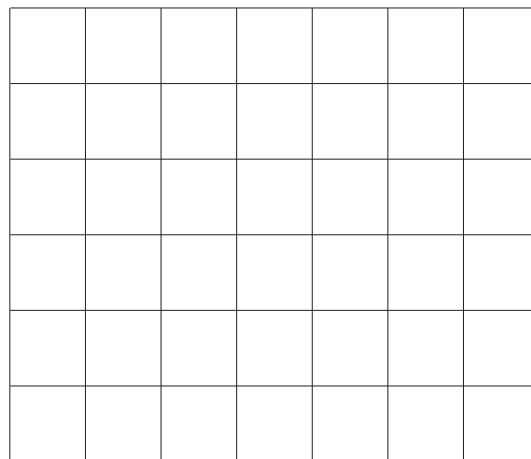
The cross-shape has

an **area** of . . . . . **cm²**

and a **perimeter** of . . . . . **cm**.

. . . .

. . . .
2 marks

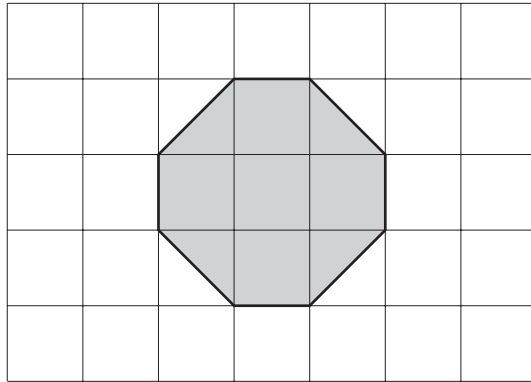(b) Draw a shape with an **area** of **6cm²**

. . . .
1 mark

(c) What is the **perimeter** of your shape?

. . . . **cm**

. . . .
1 mark

(d)   Look at the octagon.

What is the area of the octagon?

✏ . . . . cm^2

(e)   Explain how you know that the perimeter of the octagon is **more than 8 cm**.

✏

8.   A class has some gold tokens and some silver tokens.

The tokens are all the same size.

(a)   The teacher puts **4 gold tokens** and **1 silver token** in a bag.

Leah is going to take one token out of the bag without looking.

She says:

> There are two colours, so it is **just as likely**
> that I will get a gold token as a silver token.

Explain why Leah is **wrong**.

1 mark

(b)   How many **more silver** tokens should the teacher put in the bag to
make it just as likely that Leah will get a gold token as a silver token?

1 mark

(c)   Jack has a different bag with **8** tokens in it.

It is **more likely** that Jack will take a gold token
than a silver token from his bag.

How many **gold** tokens might there be in Jack's bag?

1 mark

9. A book shows two ways to change °C to °F

exact rule	**approximate rule**
multiply the °C temperature by 1.8 then add 32	double the °C temperature then add 30

(a) Fill in the gaps.

✎ Using the **exact** rule, **25°C** is . . . . °F

. . . .
1 mark

Using the **approximate** rule, **25°C** is . . . . °F

. . . .
1 mark

(b) Fill in the gaps.

✎ Using the **exact** rule, **0°C** is . . . . °F

Using the **approximate** rule, **0°C** is . . . . °F

. . . .
1 mark

(c) Show that at **10°C**, the exact rule and the approximate rule give the same answers.

✎

. . . .

. . . .
2 marks

10. (a) A club wants to take **3000 people** on a journey to London.

The club secretary says:

> We can go in coaches.
> Each coach can carry **52** people.

How many coaches do they need for the journey?
Show your working.

. . . . coaches

. . . .
. . . .
2 marks

(b) Each coach costs **£420**

What is the **total cost** of the coaches?

£

. . . .
1 mark

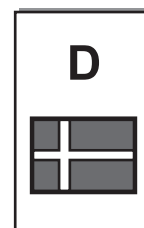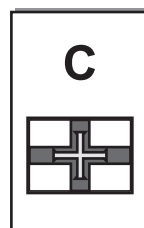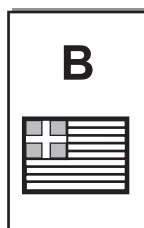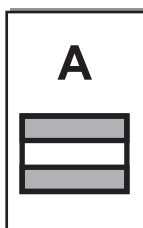(c) How much is each person's share of the cost?

£

. . . .
1 mark

11. In each box of cereal there is a free gift of a card.

You cannot tell which card will be in a box. Each card is equally likely.

There are **four** different cards: A, B, C or D

(a) **Zoe** needs card **A**

Her brother **Paul** needs cards **C** and **D**

They buy one box of cereal.

What is the probability that the card is one that **Zoe** needs?

. . . .

1 mark

What is the probability that the card is one that **Paul** needs?

. . . .

1 mark

(b) Then their mother opens the box.
She tells them the card is **not card A**

Now what is the probability the card is one that **Zoe** needs?

. . . .

1 mark

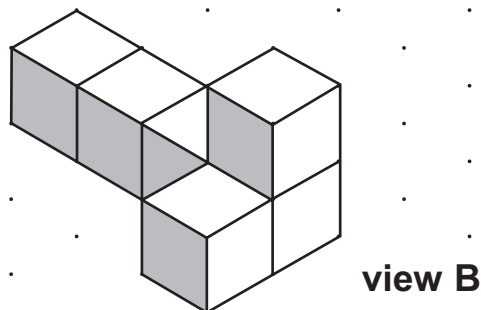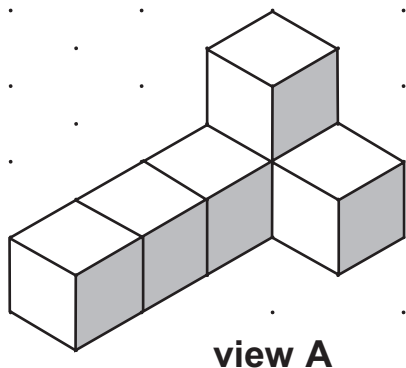What is the probability that the card is one that **Paul** needs?
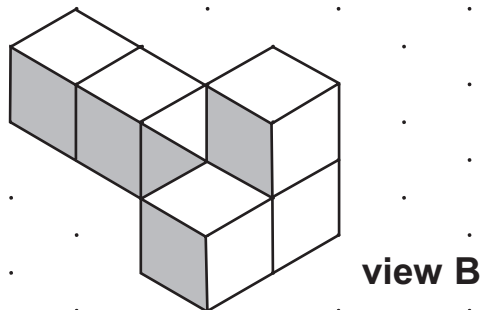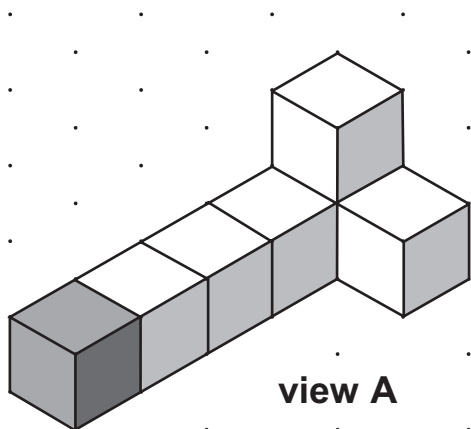
. . . .

1 mark

12. I make a model with 6 cubes.

The drawings show my model from **different views**.

view A   **view B**

(a) I join one more cube to my model.

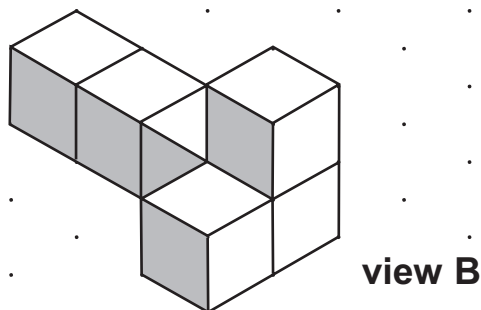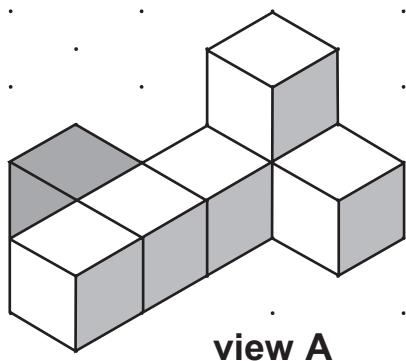The drawing from **view A** shows where I join the cube.

Complete the drawing from **view B**

view A   **view B**

1 mark

(b) Then I move the cube to a different position.

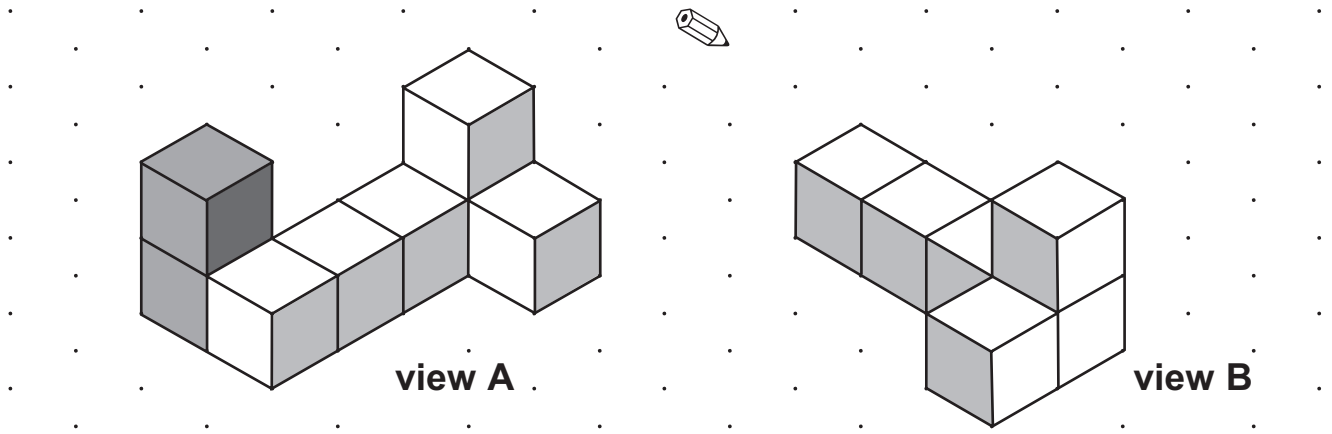Complete the drawing from **view B**

view A   **view B**   1 mark

(c)   I add two cubes to make a different shape.

Complete the drawing from **view B**

view A

view B
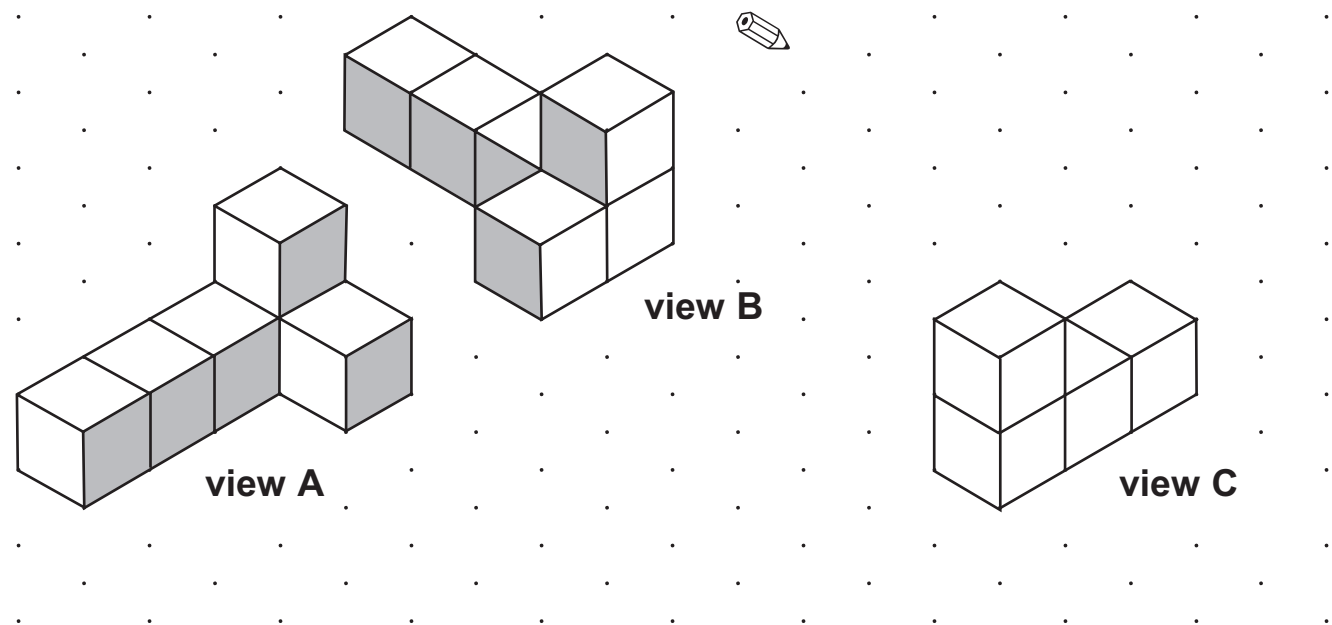
(d)   I start again with my original model of 6 cubes.

The drawing shows it from **view A** and from **view B**

I start to draw it from a different view.
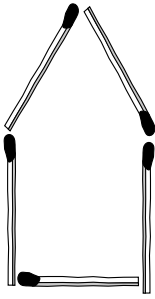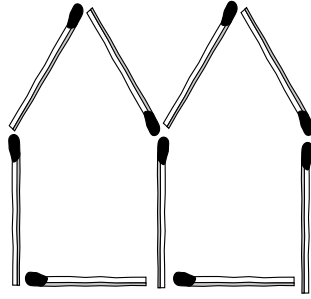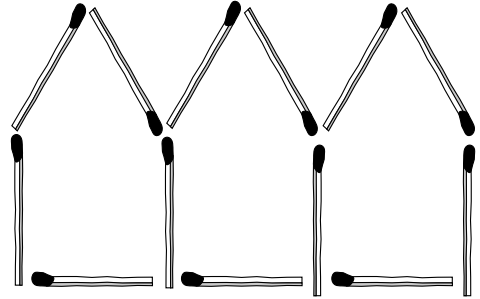
Complete the drawing from **view C**

view B

view A

view C

1 mark

1 mark

13.   You can make 'huts' with matches.

1 hut needs   2 huts need   3 huts need
5 matches   9 matches   13 matches

A rule to find how many matches you need is

$$m = 4h + 1$$

m stands for the number of matches.

h stands for the number of huts.

(a) **Use the rule** to find how many matches you need to make **8** huts.

Show your working.

. . . . matches

2 marks

(b) I use **81 matches** to make some huts.
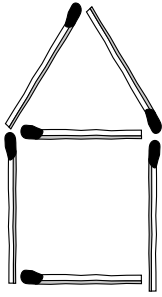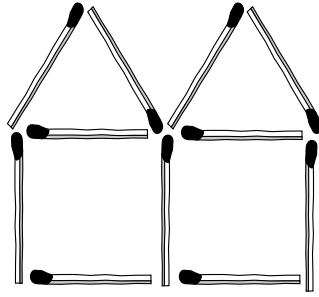
How many huts do I make?

Show your working.

. . . . huts

2 marks
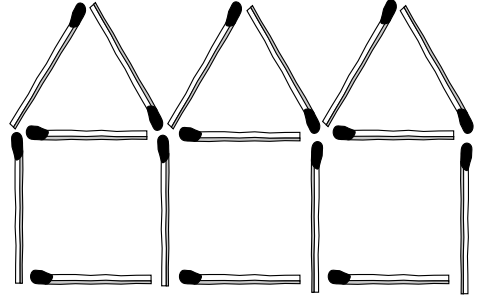
(c)   Andy makes different 'huts' with matches.

1 hut needs
6 matches

2 huts need
11 matches

3 huts need
16 matches

Circle the rule below that shows how many matches he needs.

Remember: m stands for the number of matches.

h stands for the number of huts.

✎

$m = h + 5$ $m = 4h + 2$ $m = 4h + 3$

$m = 5h + 1$ $m = 5h + 2$ $m = h + 13$

1 mark

14.   A school has a new canteen.

A special person will be chosen to perform the opening ceremony.

The names of all the pupils, all the teachers and all the canteen staff are put into a box.

One name is taken out at random.

A pupil says:

> There are only three choices.
> It could be a pupil, a teacher or one of the canteen staff.
> The probability of it being a **pupil** is $\dfrac{1}{3}$

The pupil is **wrong**. Explain why.

. . . .
1 mark

15.   Calculate

8% of £26.50   =   £ [   ]
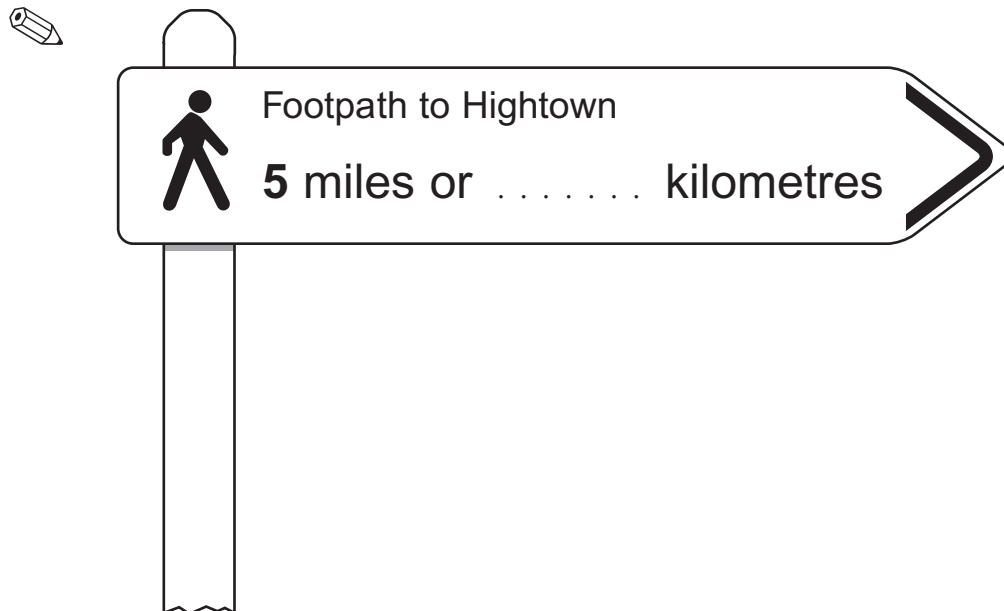
. . . . .
1 mark

$12\frac{1}{2}$ % of £98   =   £ [   ]

. . . . .
1 mark

16.   How many kilometres are there in **5 miles**?

Complete the missing part of the sign.
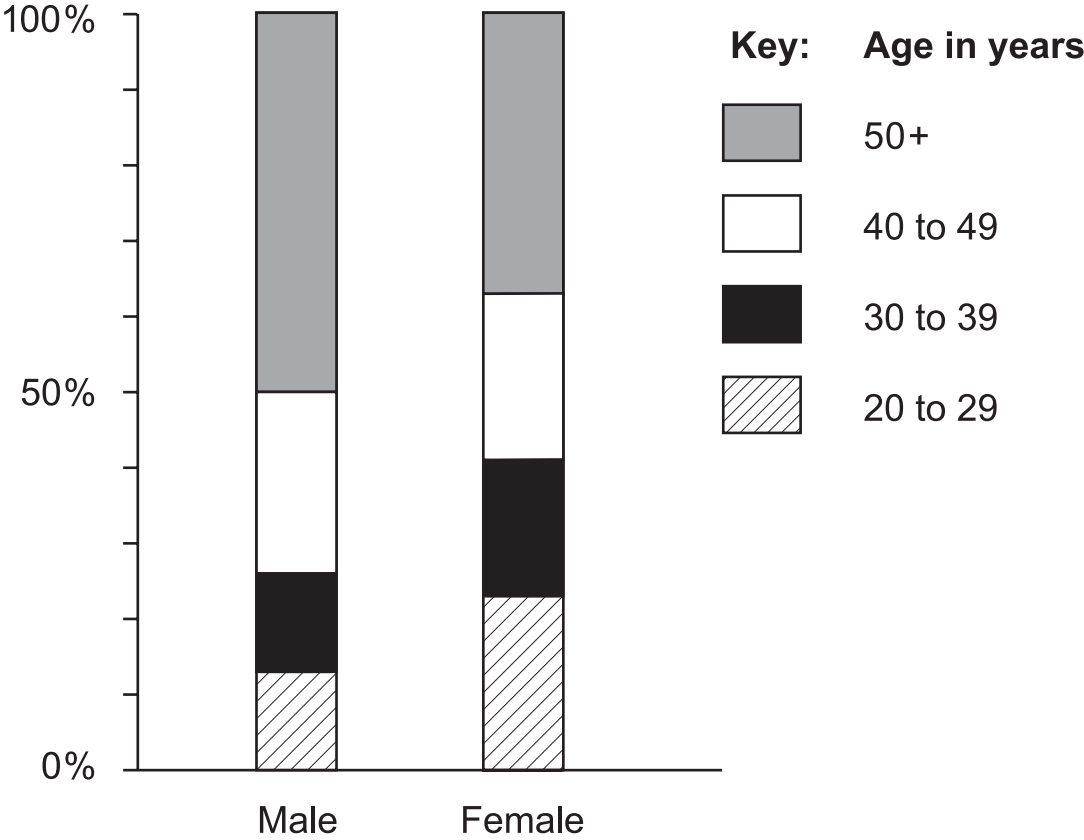
Footpath to Hightown

5 miles or . . . . . . kilometres

. . . . .
1 mark

17. A newspaper predicts what the ages of secondary school teachers will be in six years' time.

They print this chart.

(a) The chart shows **24%** of male teachers will be aged 40 to 49

About what percentage of female teachers will be aged 40 to 49?

✎ . . . . %

. . . .
1 mark

(b) About what percentage of **female** teachers will be aged **50+**?

✎ . . . . %

. . . .
1 mark

22

Graphic: Laura Sylvester/TES

(c)   The newspaper predicts there will be about
20 000 male teachers aged 40 to 49

Estimate the number of male teachers that will be aged 50+

. . . .

. . . .
1 mark

(d)   Assume the total number of male teachers will be about the same as
the total number of female teachers.

Use the chart to decide which statement is correct.

Tick (✓) your answer.

Generally, male teachers will tend to
be younger than female teachers.

Generally, female teachers will tend to
be younger than male teachers.

Explain how you used the chart to decide.

. . . .
1 mark