





4

One gram of gold costs £32.94.

What is the cost of **half a kilogram** of gold?

Show your method

£

2 marks

5

The area of a rugby pitch is 6,108 square metres.

A football pitch measures 112 metres long and 82 metres wide.

How much larger is the area of the football pitch than the area of the rugby pitch?

Show your method

square metres

3 marks

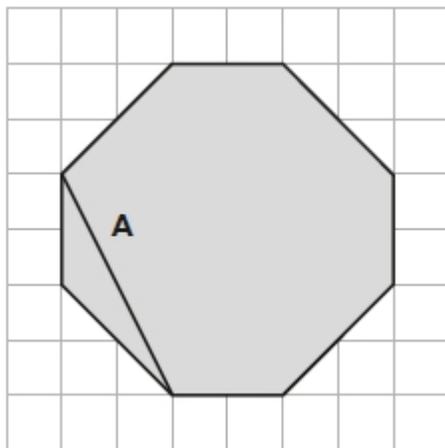


**7** The diagram shows a shaded octagon on a square grid.

Line **A** joins two vertices of the octagon.

Join two other vertices to draw a line **parallel** to line **A**.

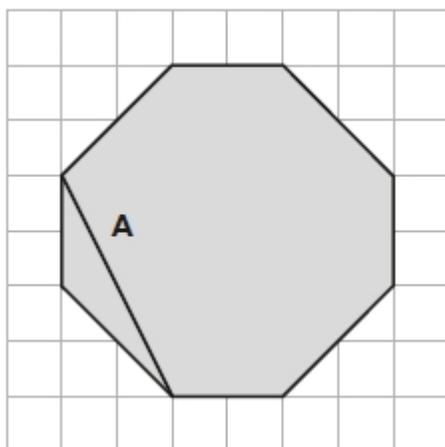
Use a ruler.



1 mark

Join two vertices to draw a line **perpendicular** to line **A**.

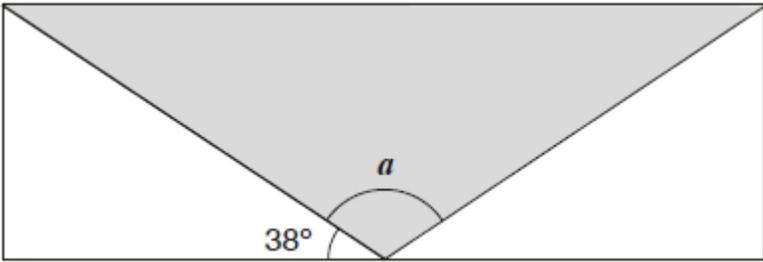
Use a ruler.



1 mark

8

A shaded **isosceles** triangle is drawn inside a rectangle.



Not to scale

Calculate the size of angle  $a$ .

Show your method

$a$  is   $^\circ$

2 marks

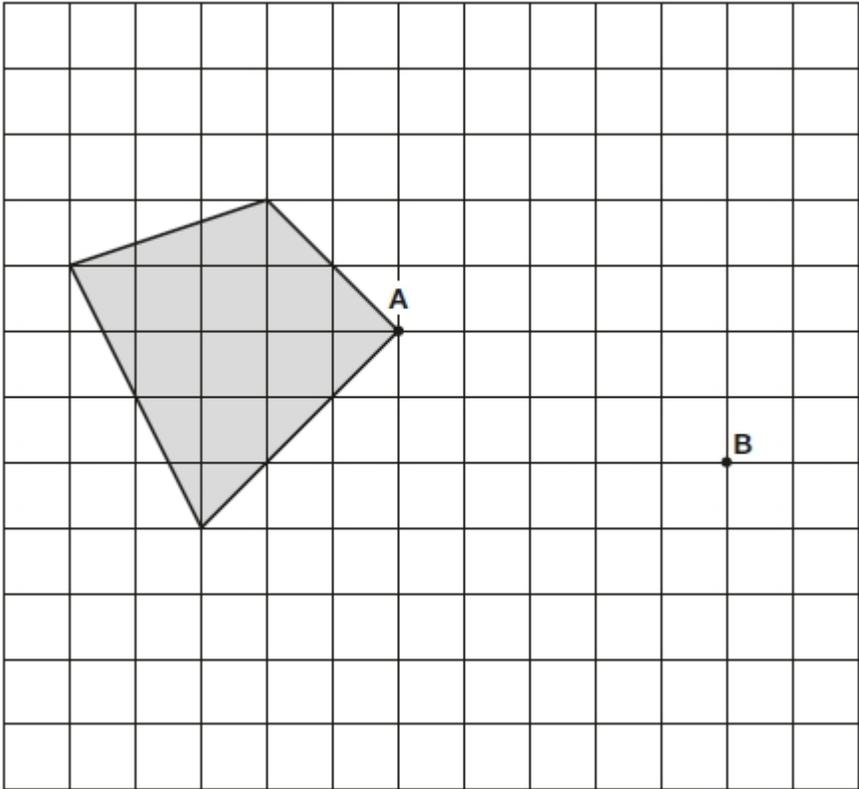
9

Here is a shaded shape on a grid.

The shape is translated so that point **A** moves to point **B**.

Draw the shape in its new position.

Use a ruler.

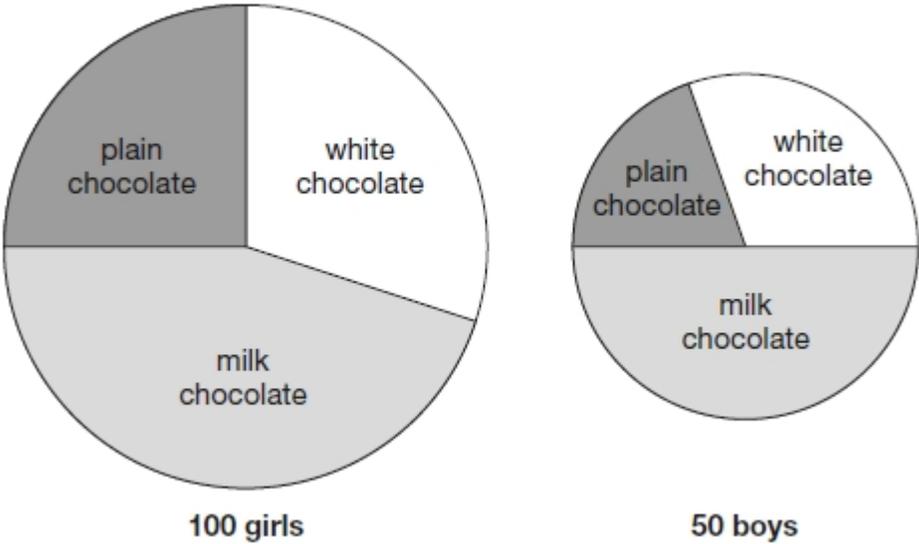


2 marks

10

100 girls and 50 boys were asked which kind of chocolate they like best.

These two pie charts show the results.

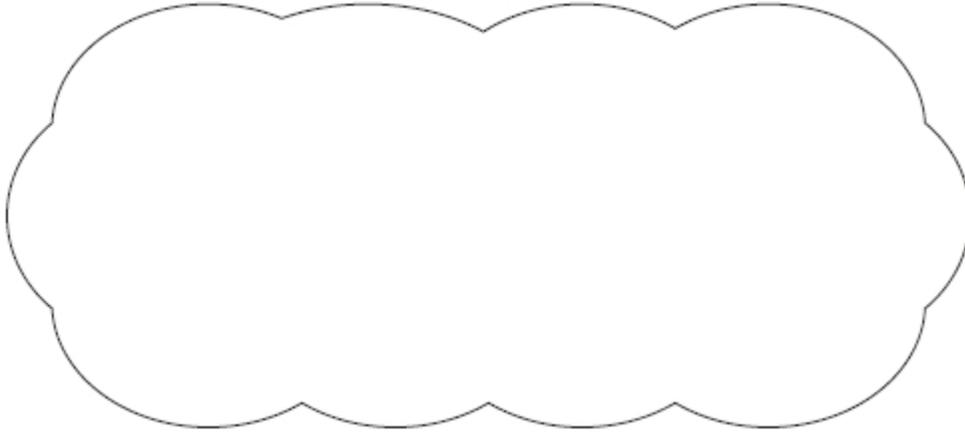


Dev says:

*"The pie charts show that more girls than boys liked milk chocolate best."*

Dev is correct.

Explain how you know.

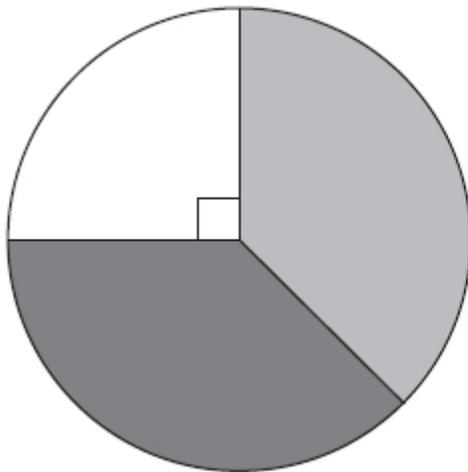


1 mark

11

A shop sells drinks.

The pie chart compares the money a shop took last year for water, juice and soft drinks.



Key:



Water



Juice

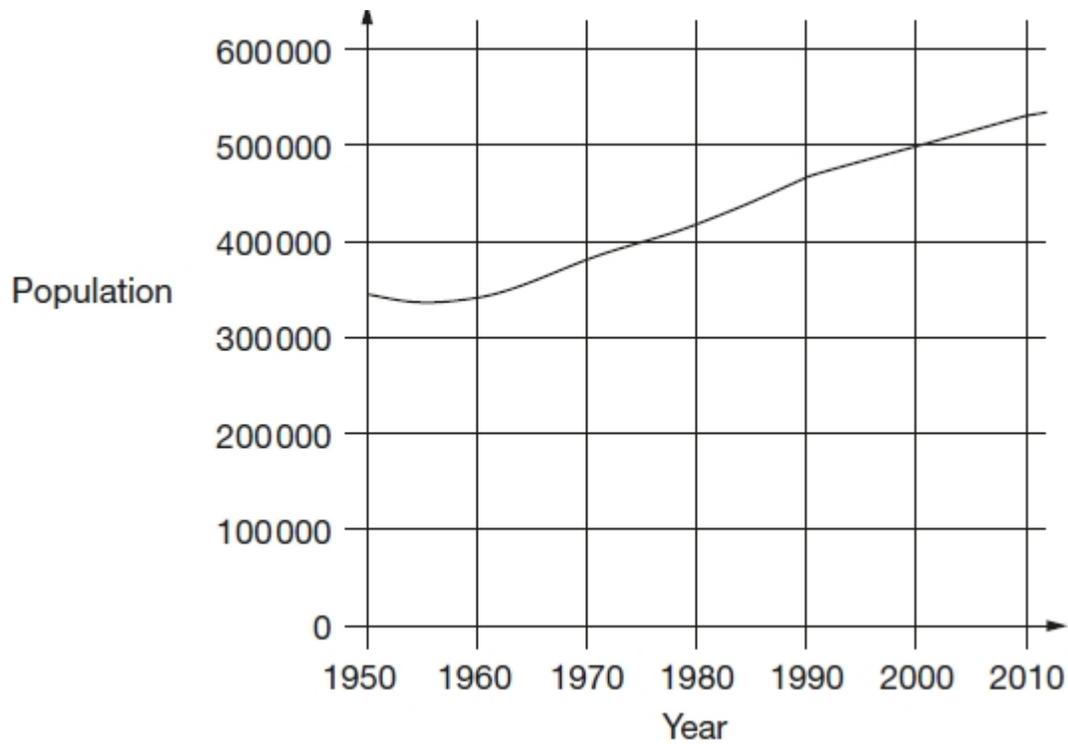


Soft drinks



12

This chart shows the population of Cornwall from 1950 to 2010.



Look at the chart.

In which year did the population first reach 400 000?



1 mark

How much did the population increase from 1950 to 2000?



1 mark

What was the population of Cornwall in 2010?



1 mark

13 Two decimal numbers add together to equal 1.

One of the numbers is 0.007.

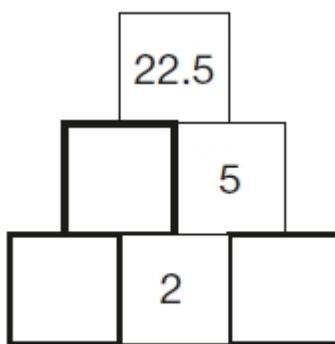
What is the other number?

1 mark

14 Here is a number pyramid.

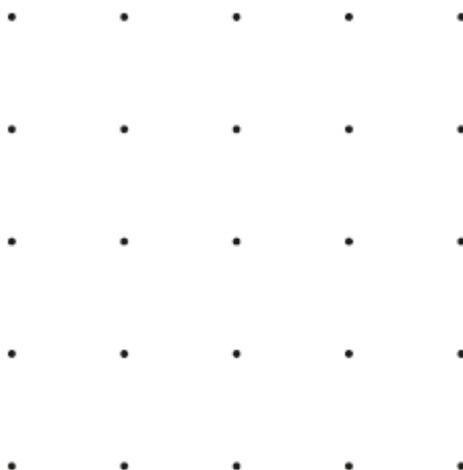
The number in a box is the **product** of the two numbers below it.

Write the missing numbers.



2 marks

15 Join dots on the grid to make a quadrilateral that has **3 acute** angles.



1 mark

16

A shop makes **100** sandwiches.

All the sandwiches are either cheese or tuna.

Some of the sandwiches also have salad with the cheese or tuna.

30 sandwiches have cheese with salad.

15 sandwiches have tuna without salad.

75 sandwiches have salad.

How many sandwiches have cheese without salad?



Show your method

2 marks

17

Sarah had a bag of cherries.



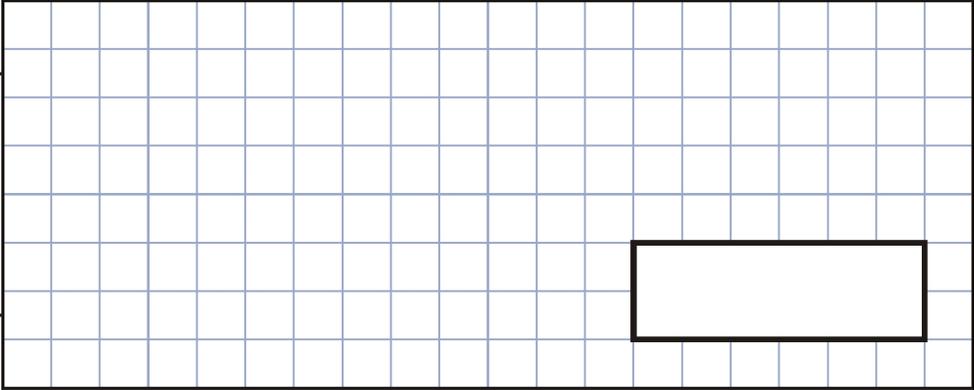
She ate 5 cherries, then gave half of what she had left to Liam.

Liam ate 5 of his cherries, then gave half of what he had left to Amy.

Amy got 2 cherries.

How many cherries did Sarah have in her bag at the start?

Show your method



2 marks

18



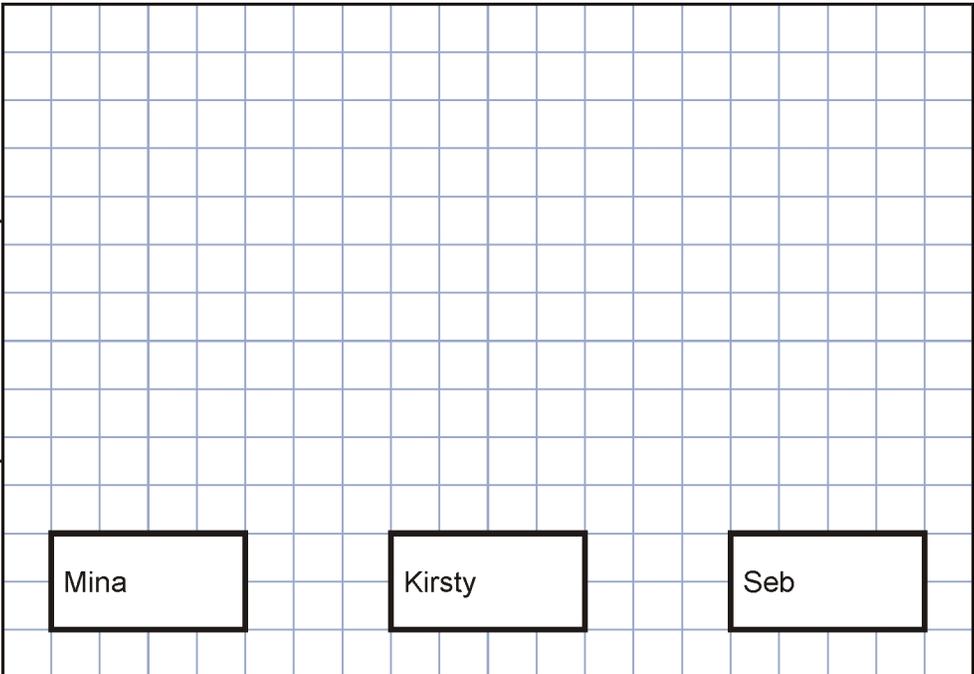
Mina has **5 more** marbles than Kirsty.

Kirsty has **2 more** marbles than Seb.

Altogether they have **30** marbles.

How many marbles does each child have?

Show your method



2 marks





23

Here are four fraction cards.

$$\frac{3}{4}$$

$$\frac{5}{8}$$

$$\frac{6}{12}$$

$$\frac{7}{16}$$

Use any **three** of the cards to make this correct.

$$\square < \square < \square$$

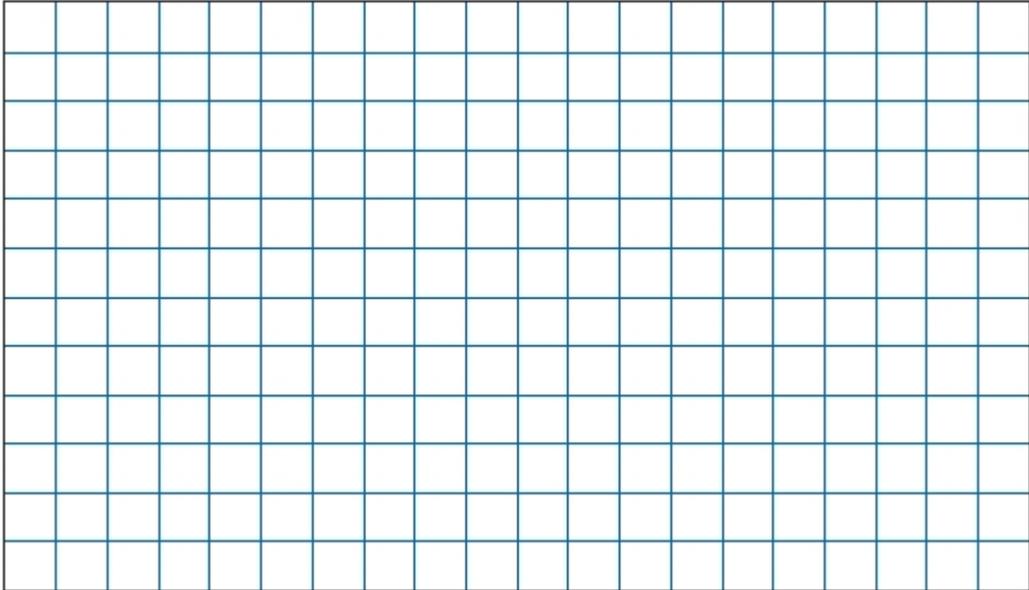
1 mark

24

Write the missing fraction.



$$\frac{1}{3} + \frac{1}{4} + \square = 1$$



1 mark

**25** Write these numbers in order, starting with the smallest.

$\frac{5}{4}$	$\frac{7}{6}$	$\frac{17}{12}$	$\frac{4}{3}$
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

smallest

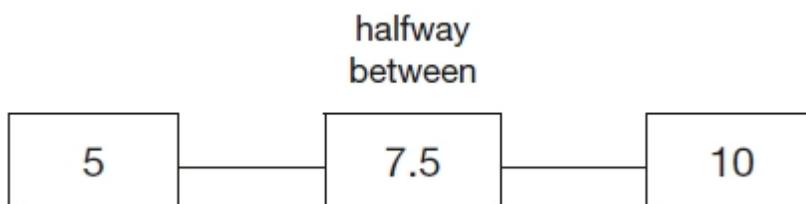
1 mark

**26** Circle the number that is closest to 20.

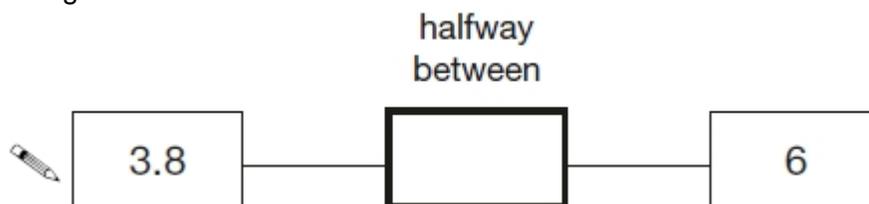
 19.95    20.1    19.09    20.09    20.201

1 mark

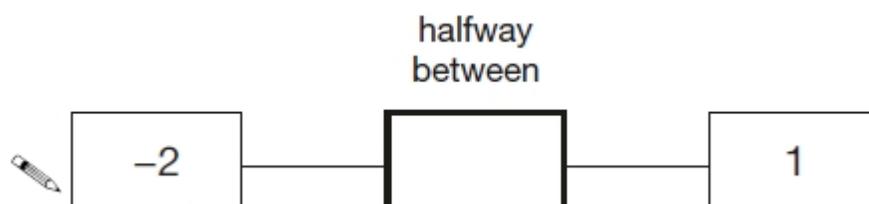
**27** The number 7.5 is halfway between 5 and 10.



Write in the missing numbers.



1 mark



1 mark

**28** Calculate **55% of 640**.



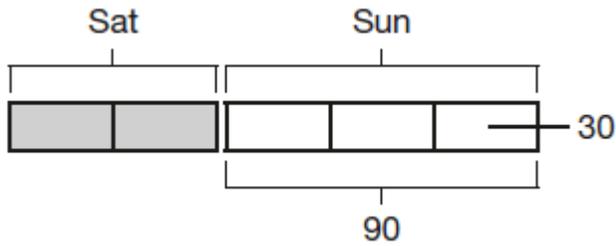
1 mark





OR

•



$$30 \times 5$$

*Answer need not be obtained for the award of **ONE** mark.*

Up to 2

[2]

4

Award **TWO** marks for the correct answer of £16,470

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g:

- $\text{£}32.94 \times 1000 = \text{£}32,940$   
 $\text{£}32,940 \div 2$

OR

- $\text{£}32.94 \times 500$   
 $= \text{£}3294 \times 5$

*Answer need not be obtained for the award of **ONE** mark.*

Up to 2

[2]

5

Award **THREE** marks for the correct answer of 3076 square metres.

If the answer is incorrect, award **TWO** marks for:

- sight of 9184 as evidence of the multiplication for the first step completed correctly.

OR

- evidence of an appropriate method which contains no more than **ONE** arithmetical error, e.g:

$$\begin{array}{r} 112 \\ \times \quad 82 \\ \hline 8960 \\ \quad 224 \\ \hline 9187 \quad (\text{error}) \end{array}$$

$$\begin{array}{r} 9187 \\ - \quad 6108 \\ \hline 3079 \end{array}$$

- Award **ONE** mark for evidence of an appropriate method which contains more than **ONE** arithmetical error.

*Do not award any marks if the error is in the place value of the multiplication, e.g. the omission of the final zero when multiplying by tens, e.g.*

$$\begin{array}{r}
 112 \\
 \times \underline{82} \\
 \hline
 896 \\
 \underline{224} \\
 \hline
 \text{wrong answer}
 \end{array}$$

**Commentary:** As well as a range of 1 mark and 2 mark questions, one of the questions in a suite of tests may now attract three marks. The solution to a 3 mark question may involve more steps or, as in this example, more complex calculations.

Up to 3m

[3]

6

Award **THREE** marks for the correct answer of £55.10

Award **TWO** marks for a complete correct method with one arithmetic error, eg

■	Sticks	£12.50
	Sugar	£ 9.99 (error)
	Apples	+ <u>£22.50</u>
	Total	£44.99
	Profit	£100.00
		- <u>£ 44.99</u>
		£ 55.01

**OR**

If the answer is incorrect, award **TWO** marks for evidence of a correct total for all the ingredients, eg

■	Sticks	£12.50
	Sugar	£ 9.90
	Apples	+ <u>£22.50</u>
	Total	£44.99

**OR**

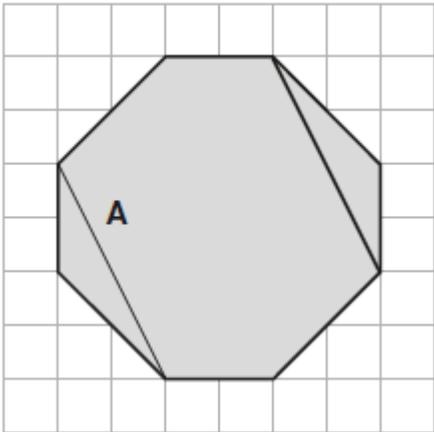
Award **ONE** mark for sight of £12.50 **and** £9.90

Up to 3

[3]

7

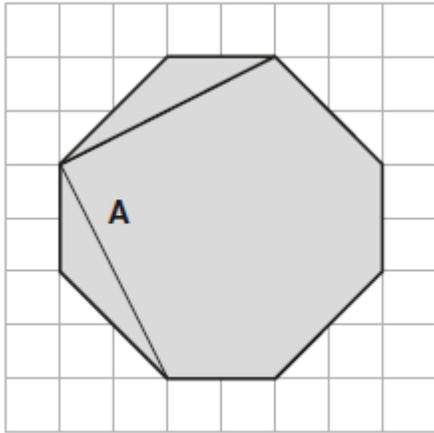
(a) Line drawn parallel to A, as shown:



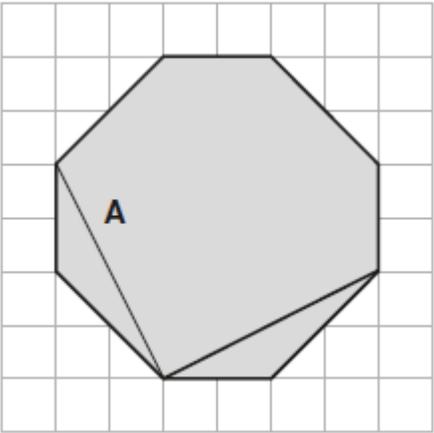
*Accept slight inaccuracies in drawing, provided the intention is clear.*

1

(b) Line drawn perpendicular to A, as shown:



OR



*Accept slight inaccuracies in drawing, provided the intention is clear.*

1

[2]

**8**

Award **TWO** marks for the correct answer of  $104^\circ$ .

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g:

- $180 - 38 - 38 = a$

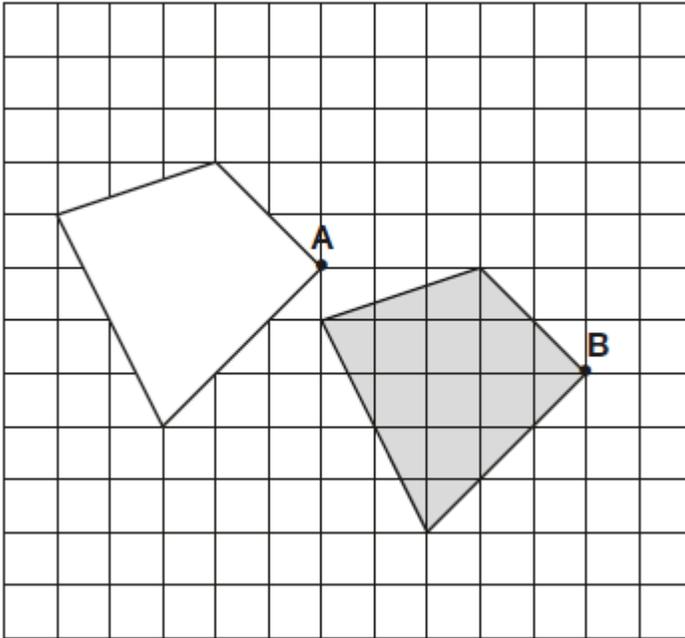
*Answer need not be obtained for the award of **ONE** mark.*

Up to 2

[2]

**9**

Award **TWO** marks for three vertices of the shape, excluding B, translated correctly as shown below:



If the answer is incorrect, award **ONE** mark for two vertices, excluding B, translated correctly.

*Accept slight inaccuracies in drawing provided intention is clear.*

Up to 2

[2]

**10**

Award **ONE** mark for an explanation which recognises that the two pie charts represent different numbers of children, e.g:

- '25 boys like milk chocolate best and more than 25 girls do'
- 'It's almost half of 100 girls and that's more than half of 50 boys'
- 'The pie chart shows that half of the boys chose milk chocolate and that's 25. About 45 girls chose milk chocolate because it's nearly half of the girls' pie chart'
- '25 boys chose milk chocolate, but (whole number in the range 40-49) girls chose milk chocolate'

- 'There are twice as many girls as boys so a quarter of the girls' pie chart is the same number as half of the boys' pie chart, and it's more than a quarter of the girls'

- ' $\frac{1}{2}$  of 50 boys chose milk = 25

$$\frac{1}{4} \text{ of } 100 \text{ girls chose plain} = 25$$

and from the girls' pie chart it is obvious that more chose milk than plain'

- 'There are twice as many girls as boys and the sizes of the pie charts show this and the area for boys who like milk chocolate is smaller than the area for girls who like it'.

**Do not accept vague or incomplete explanations, e.g:**

- '100 is more than 50'
- 'More girls took part than boys so more girls like milk chocolate'
- 'The section for boys who like milk chocolate is smaller than the section for girls who like it'.

**Commentary:** The pie charts are presented using the mathematical convention that their areas are proportional to the numbers they represent, i.e. in this example the chart for girls has twice the area of the chart for boys.

[1]

11

Award **TWO** marks for the correct answer of £12396.

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg:

$$\begin{array}{r} \blacksquare \quad \text{£}8264 \\ \times \quad \quad \quad 4 \\ \hline \text{£}33056 \end{array}$$

**OR**

$$\begin{array}{r} \text{£}33056 \\ - \quad 8264 \\ \hline \text{£}24792 \end{array}$$

$$\text{£}24792 \div 2$$

**OR**

$$\begin{array}{l} \blacksquare \quad \text{£}8264 \div 2 = \text{£}4132 \\ \text{£}8264 + \text{£}4132 \end{array}$$

*Answer need not be obtained for the award of **ONE** mark*

Up to 2

[2]

12

(a) 1974 **OR** 1975 **OR** 1976

1

(b) A whole number answer in the range 130 000 to 180 000 **inclusive**.

1

(c) A whole number answer in the range 510 000 to 550 000 **exclusive**.

**Do not accept 510 000 OR 550 000**

1

[3]

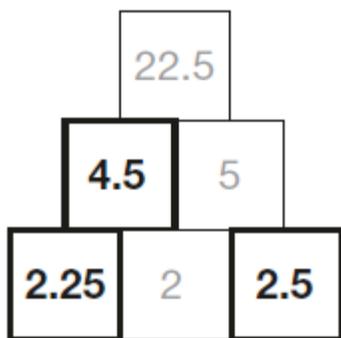
13

0.993

[1]

14

Award **TWO** marks for three numbers correctly placed.



If the answer is incorrect award **ONE** mark for two numbers correctly placed.

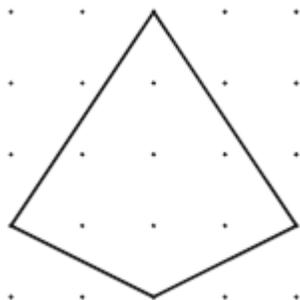
**Commentary:** This question involves multiplying and dividing decimals where the answer has up to two decimal places (6F9).

Up to 2

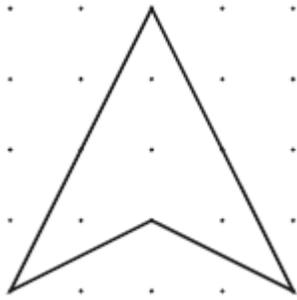
[2]

15

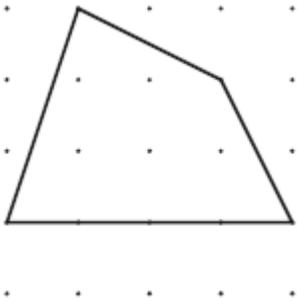
A quadrilateral with three acute angles, e.g.



OR



OR



Accept inaccurate drawing provided the intention is clear.

[1]

16

10

2

or

Shows or implies a complete correct method, eg:

- $100 - (15 + 75)$
- No salad,  $100 - 75 = 35$  (error)  
Cheese without salad,  $35 - 15$
- Tuna with salad,  $75 - 30 = 45$   
Tuna,  $45 + 15 = 55$  (error)  
Cheese,  $100 - 55 = 45$   
Cheese without salad,  $45 - 30 = 15$  (error)

	salad	no salad	
cheese	30	error	
tuna	45	15	
	75	25	100

1

[2]

17

Award **TWO** marks for the correct answer of 23

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg

$$2 \times 2 = 4$$

$$4 + 5 = 9$$

$$9 \times 2 = 18$$

$$18 + 5 = \text{wrong answer}$$

*Working must be carried through to reach an answer for the award of **ONE** mark.*

**Up to 2 (U1)**

**[2]**

18

Award **TWO** marks for the correct answer of

Mina

Kristy

Seb

If the answer is incorrect, award **ONE** mark for:

- two numbers correct

**OR**

- 14 **AND** 9 **AND** 7 with some or all attributed to the wrong child

**OR**

- evidence of appropriate working, eg

$$30 - 5 + 2 = 27$$

$$\text{Kirsty} = 27 \div 3 = \text{wrong answer}$$

$$\text{Mina} = \text{wrong answer} + 5$$

$$\text{Seb} = \text{wrong answer} - 2$$

*Working must be carried through to reach an answer for the award of **ONE** mark.*

**OR**

- a 'trial and improvement' method, eg

$$10 + 5 + 3 = 18$$

$$20 + 15 + 13 = 48$$

$$15 + 10 + 8 = 33$$

*A 'trial and improvement' method must show evidence of improvement, but a final answer need not be reached for the award of **ONE** mark*

Up to 2  
U1

[2]

**Do not accept** answer of £26

**or**

Shows or implies a complete method with not more than one computational error or rounding error

eg

- $35 \times 24.75 = 860$  (error)  
 $1200 - 860 = 340$   
 $340 \div 12.5 = 27.2$   
 Answer = 27
- $(1200 - 35 \times 24.75) \div 12.5$
- $1200 - 866.25 = 333.75$   
 $333.75 \div 12.5$

or

26.7 seen

or

Shows the correct total for the trees, ie £1191.25

or

Shows the correct change, ie £8.75

**Do not accept** answer of 27 without a correct method shown or implied

*! Method used for  $\div 12.5$  is repeated subtraction*

*Do not accept as a correct method*

**20**Award **TWO** marks for the correct answer of 75.If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg:

- $125 \div 50 = 2.5$

$$2.5 \times 30 = \text{wrong answer}$$

**OR**

- 50g oats    30g raisins

$$25\text{g oats} \quad 15\text{g raisins} \quad (\div 2)$$

$$125\text{g oats} \quad \text{wrong answer} \quad (\times 5)$$

*Working must be carried through to reach an answer for the award of **ONE** mark.*

Up to 2

**[2]****21**

67 boxes

**[1]****22**

$$\begin{array}{r} \boxed{5} \boxed{4} \cdot \boxed{7} \boxed{5} \\ 8 \overline{) 438} \end{array}$$

**[2]****23**Award **ONE** mark for any of the following:

$$\frac{7}{16} < \frac{6}{12} < \frac{5}{8}$$

**OR**

$$\frac{7}{16} < \frac{6}{12} < \frac{3}{4}$$

**OR**

$$\frac{7}{16} < \frac{5}{8} < \frac{3}{4}$$

OR

$$\frac{6}{12} < \frac{5}{8} < \frac{3}{4}$$

Accept equivalent fractions correctly ordered, e.g:

$$\frac{21}{48} < \frac{24}{48} < \frac{30}{48}$$

$$\frac{21}{48} < \frac{24}{48} < \frac{36}{48}$$

$$\frac{7}{16} < \frac{10}{16} < \frac{12}{16}$$

$$\frac{12}{24} < \frac{15}{24} < \frac{18}{24}$$

[1]

24

$$\frac{5}{12}$$

[1]

25

$$\frac{7}{6} \quad \frac{5}{4} \quad \frac{4}{3} \quad \frac{17}{12}$$

Accept equivalent, e.g.  $\frac{14}{12} \quad \frac{15}{12} \quad \frac{16}{12} \quad \frac{17}{12}$

[1]

26

Number circled as shown:

**19.95**    20.1    19.09    20.09    20.201

Accept alternative unambiguous indications,  
eg number ticked, crossed or underlined.

[1]

27

(a) 4.9

Accept equivalent fractions and decimals

1

(b) -0.5

Accept  $-\frac{1}{2}$

1

[2]

28

352

**Do not accept 352%**

[1]

29

Award **TWO** marks for the correct answer of 160

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg:

- $64 \div 2 = 32$   
 $64 + 64 + 32 = \text{wrong answer}$

**OR**

- $64 \times 5 = 320$   
 $320 \div 2 = \text{wrong answer}$   
*Working must be carried through to reach an answer for the award of **ONE** mark.*

Up to 2  
U1

[2]

30

(a)  $\frac{1}{20}$  or equivalent

*Accept equivalent fractions, decimals or percentages, eg:*

- 5%
- 0.05
- $\frac{5}{100}$

**Do not accept 5 without a percentage sign**

1

(b) 95

**Do not accept equivalent fractions or decimals**

1

[2]