1 Seb had some cherries.

Every day he ate 10 cherries and gave 5 away.

After he gave the last 5 cherries away, he had eaten 40 cherries altogether.

How many cherries did Seb have at the start?

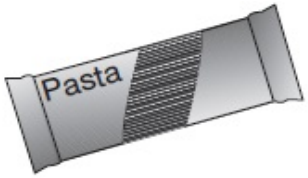
Show your method

2 marks

2

Chen is cooking some pasta.

The recipe says he needs 350 grams of pasta for 4 people.



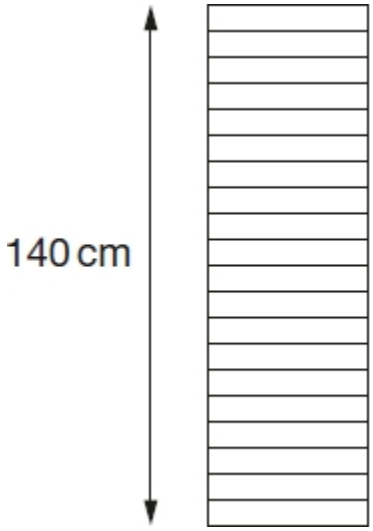
How many **kilograms** of pasta does he need for **12 people**?

Show your method

kg

2 marks

3 A stack of 20 identical boxes is 140 cm tall.



Not actual size

Stefan takes **three** boxes off the top.

How tall is the stack now?

Show your method

cm

2 marks

4 The length of an alligator can be estimated by:

- measuring the distance from its eyes to its nose
- then multiplying that distance by 12

What is the **difference** in the estimated lengths of these two alligators?

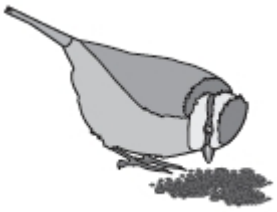
Not to scale

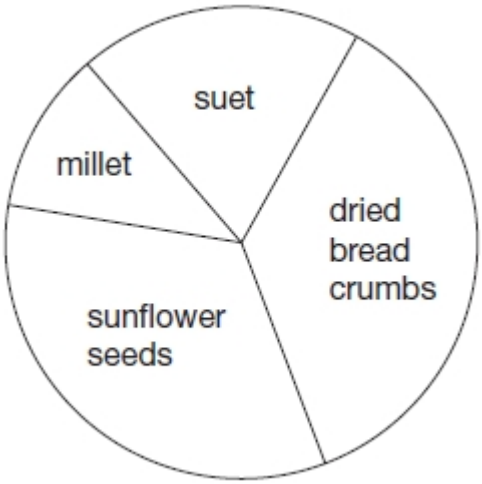
Show your method

cm

2 marks

5 This pie chart shows the ingredients to make a food mixture for wild birds.





Estimate the **percentage** of mixture that is suet.

%

1 mark

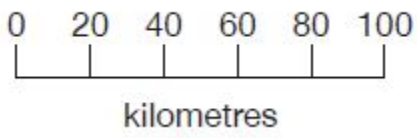
Mina uses 100 grams of millet in the mixture.

Estimate how many grams of sunflower seeds she should use.

g

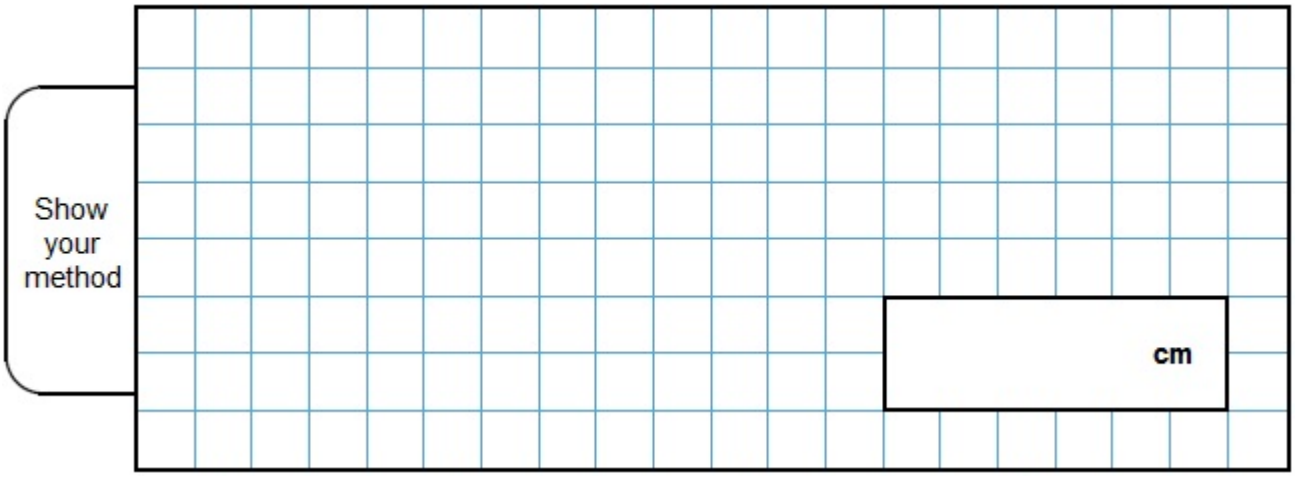
1 mark

6 On a map, 1 cm represents 20 km.



The distance between two cities is **250 km**.

On the map, what is the distance between the two cities?



2 marks

7 Amina planted some seeds.

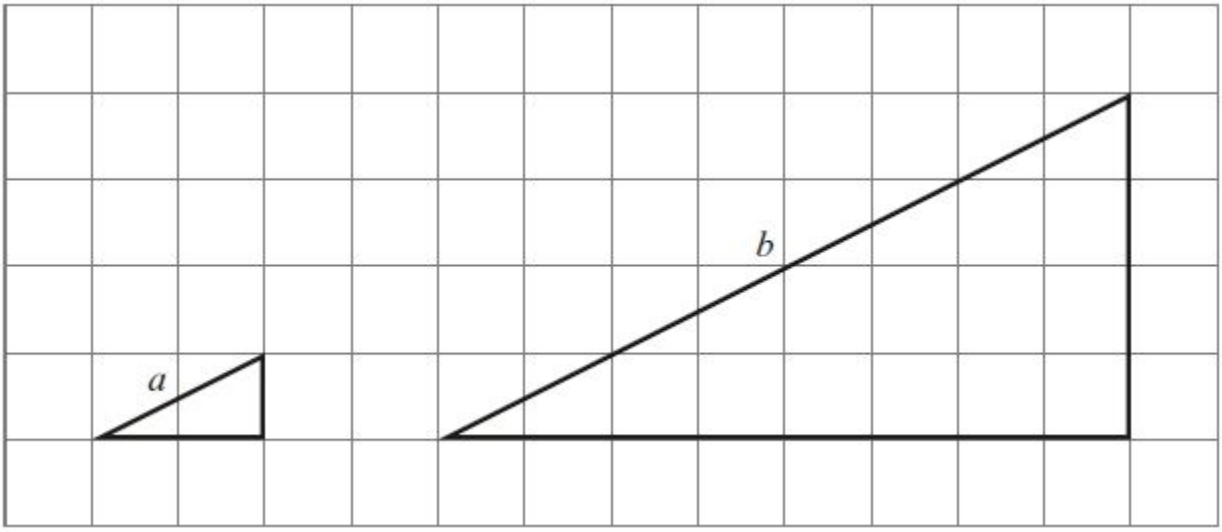
For every 3 seeds Amina planted, only 2 seeds grew.

Altogether, 12 seeds grew.

How many seeds did Amina **plant**?

1 mark

8 Here are two similar right-angled triangles.



Write the ratio of side a to side b.

$a : b =$ [:]

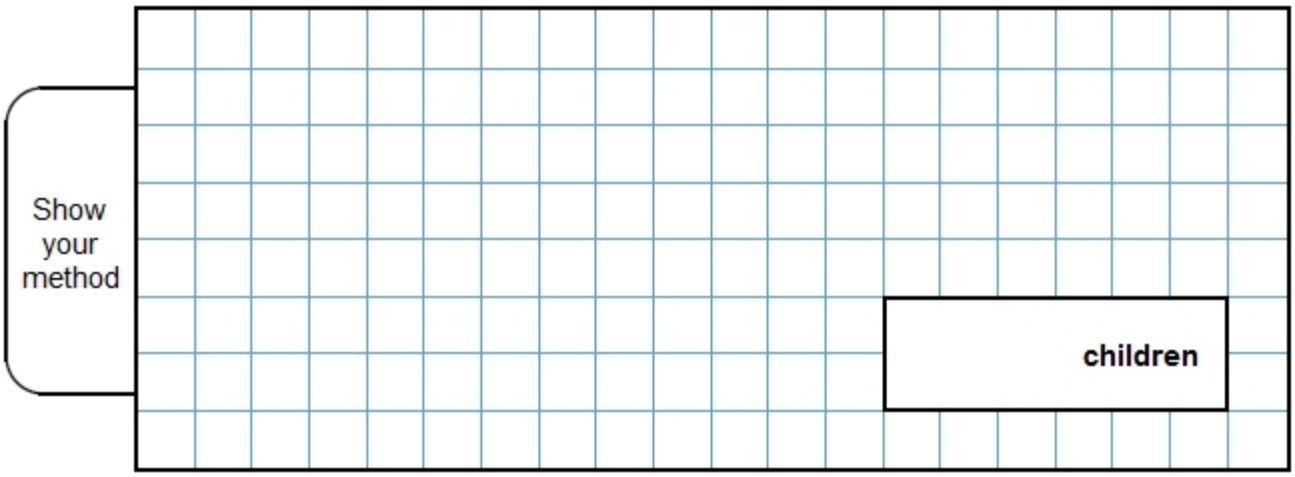
1 mark

9 In a survey of children's favourite fruit juices, these were the results.

Juice	Apple	Orange	Grape	Mango
Percentage of children	25%	14%	30%	31%

(a) **20 more** children chose grape than chose apple.

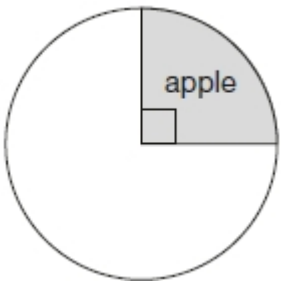
How many children took part in the survey?



2 marks

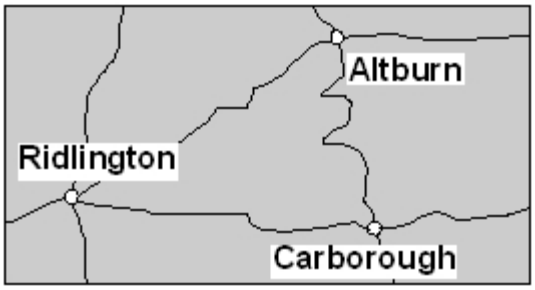
(b) Chen makes a pie chart to show the results.

What **angle** should he use for the children who chose **mango**?



1 mark

10 This map has a scale of **1 centimetre to 6 kilometres.**



The road from Ridlington to Carborough measured **on the map** is **6.6 cm** long.

What is the length of the road in **kilometres?**

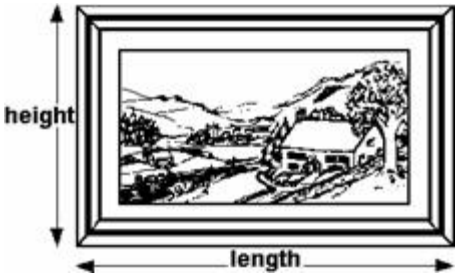
Show your method

km

2 marks

11 Here are some picture frame sizes.

height in cm	10	12	14	16
length in cm	16	20	24	28



For each frame, the length is **twice** the height, **subtract 4**

What is the **length** of a frame which has a **height** of **36 cm**?

Show your method

cm

2 marks

For each frame, the length **(L)** is **twice** the height **(H)**, **subtract 4**

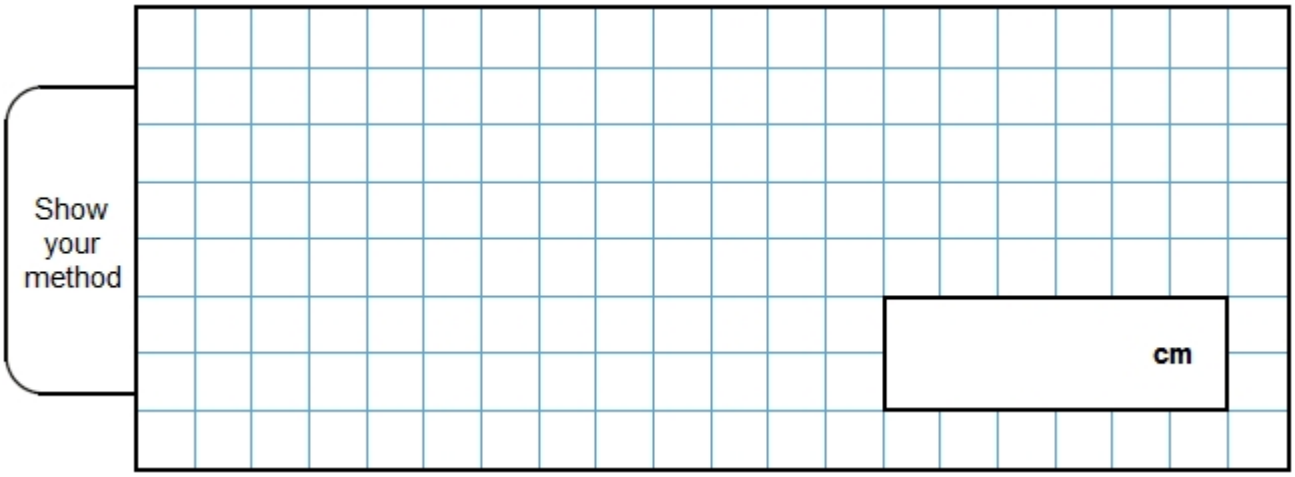
Write this in symbols.

L =

2 marks

A **new** frame has its length **twice** its height.
It is made with 126cm of wood.

What is the **length** of this frame?

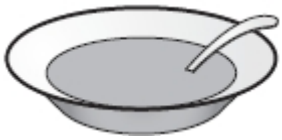


2 marks

12 Alfie did a survey to find which soup was most popular.

The choices were:

- tomato
- chicken
- mushroom

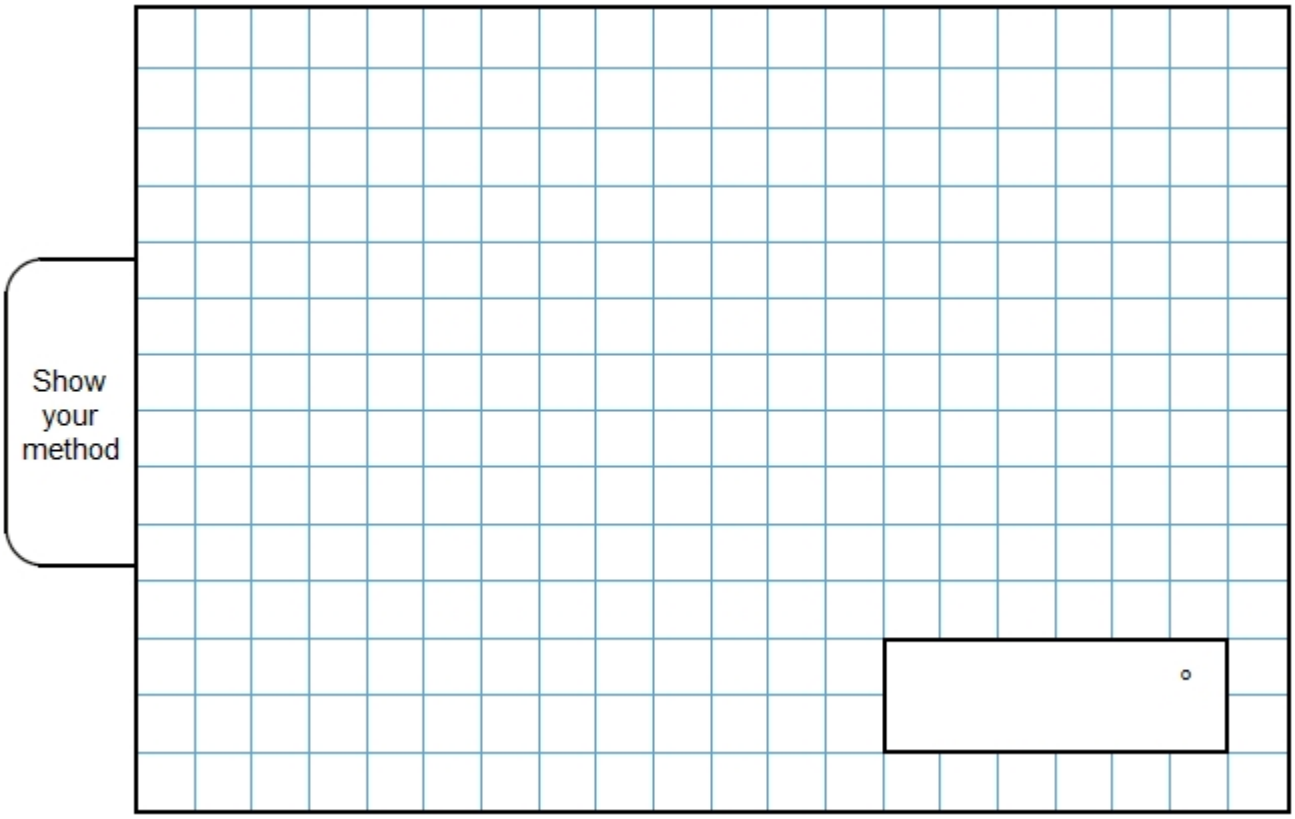


A quarter of the children chose chicken soup.

Four times as many children chose tomato soup as chose mushroom soup.

Alfie makes a pie chart to show this information.

What **angle** should he use for the children who chose tomato soup?



3 marks

13

Shortcrust pastry is made using flour, margarine and lard.

The **flour, margarine** and **lard** are mixed in the ratio

8 : 3 : 2 by weight.

How many grams of **margarine** and **lard** are needed to mix with **200 grams** of flour?

Show your method

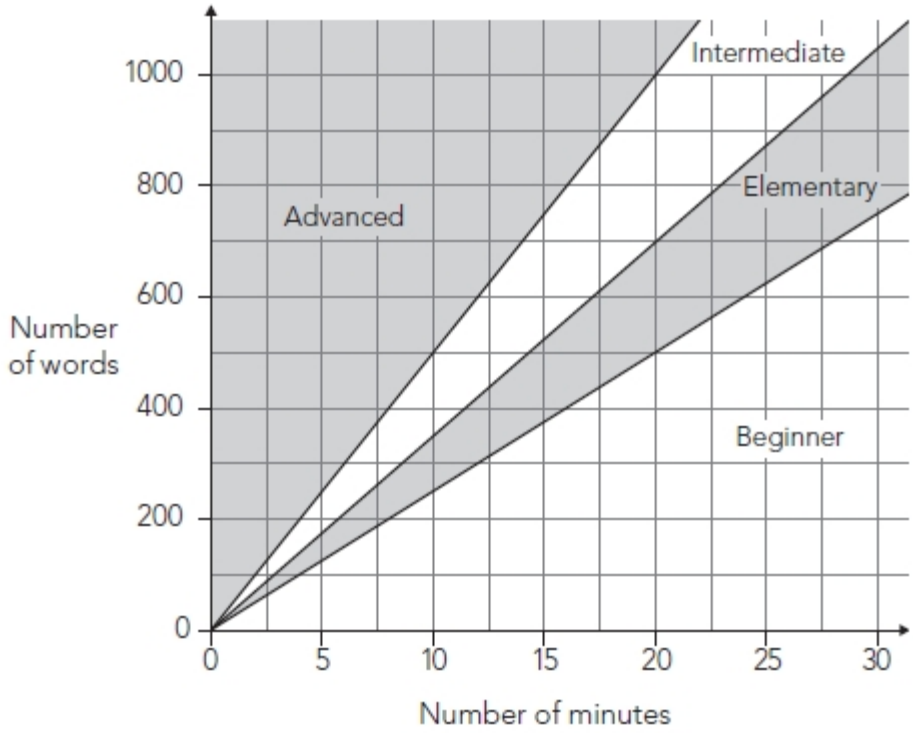
margarine **g**

lard **g**

2 mark

14 How fast you can type accurately is called your typing speed.

The regions of the graph show information about different typing speeds.



Darren's level of typing is **elementary**.

In **20 minutes** he should be able to type between 500 and 700 words.

Jo's level of typing is **intermediate**.

How many words should she be able to type in **20 minutes**?

Between _____ and _____

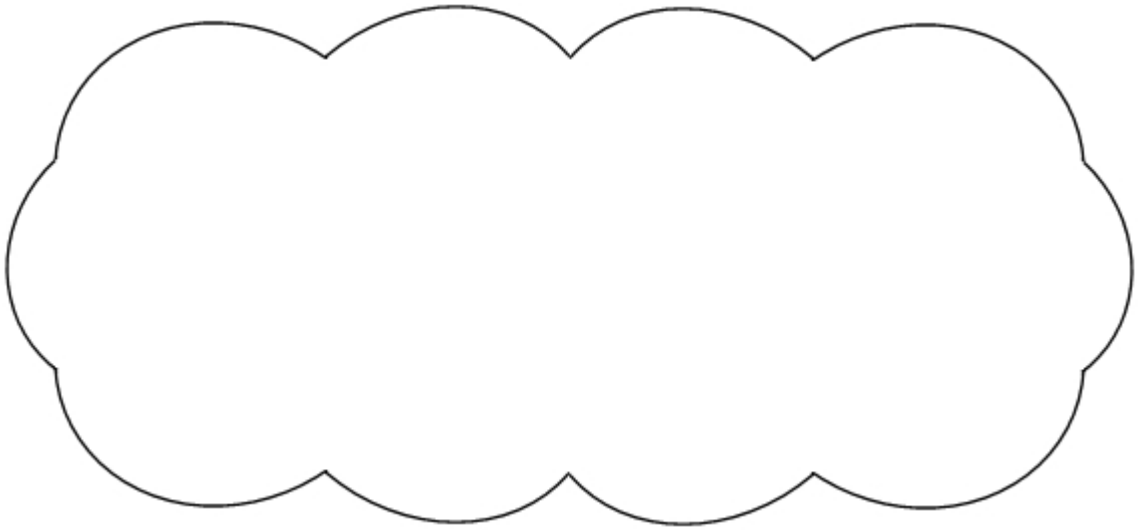
1 mark

Kath's typing speed is **30 words per minute**.

What level is Kath's typing?

☐ Advanced ☐ Intermediate ☐ Elementary ☐ Beginner

Explain how you know.



1 mark

Mark schemes

1 Award **TWO** marks for the correct answer of 60

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

- Ate 10, gave away 5

  Ate 40, gave away 20

  Ate 40 + 20 = wrong answer

- 40 ÷ 10 = 4

  4 × 5 = 20

  20 + 40 = wrong answer

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

Up to 2
U1

[2]

2 Award **TWO** marks for the correct answer of 1.05 kg.

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

- 12 ÷ 4 = 3

  350 × 3 = 1050

  1050 ÷ 1000 = wrong answer

***Do not** accept 1050 g*

*Accept for **ONE** mark 10.5 or 105 as evidence of appropriate working.*

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

Up to 2m

[2]

3 Award **TWO** marks for the correct answer of 119.

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

- 140 ÷ 20 = 7
  3 × 7 = 21
  140 – 21

OR

- 140 ÷ 20 = 7
  20 – 3 = 17
  17 × 7

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

Up to 2m

[2]

4 Award **TWO** marks for the correct answer of 30

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

- 17.5 × 12 = 210
  15 × 12 = 180
  210 − 180 =

OR

- 2.5 × 12 =

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

Up to 2m

[2]

5 (a) Answer in the range 15% inclusive to 25% exclusive

***Do not** accept 25%*

1

(b) Answer in the range 200 g to 400 g exclusive

***Do not** accept 200 g **OR** 400 g.*

1

[2]

6 Award **TWO** marks for the correct answer of 12.5

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

- 250 ÷ 20

OR

- 20 km is 1 cm
  100 km is 5 cm
  50 km is 2.5 cm
  5 cm + 5 cm + 2.5 cm

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

***Do not** accept incorrect proportions in any step without evidence of the calculation performed.*

Up to 2m

[2]

7 18

*Accept 18:12 **OR** 12:18*

[1]

8 1:4

Accept other equivalent ratios, e.g. 2:8 or 0.5:2

***Do not** accept reversed ratios, e.g. 4:1 or 8:2*

[1]

9 (a) 400

2

or

Shows or implies a complete correct method, eg:

- 30% − 25% = 5%

  5% = 20

  100% = 20 × 20

1

(b) 111.6 **or** 112

***Do not accept** 111*

1

[3]

10 Award **TWO** marks for 39.6 km, even if there are errors in the working.

If the answer is incorrect, award **ONE** mark for evidence of correct partial result 6 × 6.6 by any appropriate method (not repeated addition only), eg:

- 6 × 6.6 = 36 + ... (incorrect answer given)
- 6 × 6.6 = 396

The writing of an expression such as:

- ***6 × 6.6***

alone, without attempt at calculation, is insufficient for the mark.

Up to 2

[2]

11 (a) Award **TWO** marks for correct answer of 68cm.
If answer is incorrect award **ONE** mark if any method is used which shows evidence of doubling 36 **AND** subtracting 4, eg:

- 30 + 6 × 2 – 4

Up to 2

(b) Award **TWO** marks for expressions such as:

- L = 2H – 4
- L = 2(H – 2)
- L = H + H – 4

If incorrect award **ONE** mark for evidence of multiplication of H by 2,
eg: **2H H2 H × 2 2 × H 2.H H.2**
or **ONE** mark for evidence of subtraction of 4,
eg: **L = H – 4**

*Do **not** accept **L = × 2 – 4 = H***

*Do **not** award marks for a repeat of the formula in words as given in the question.*

Up to 2

(c) Award **TWO** marks for 42 cm, even if there are errors in the working.

If answer is incorrect, award **ONE** mark for evidence that the relationship "length is twice the height" has been used, eg:

- 2H + 4H = 126
- H + 2H + H + 2H = 126
- 20 + 40 + 20 + 40 = 120

The answers may be implicit, eg:

- *21 + 42 + 21 + 42 = 126*
  (Two marks)
- *126 ÷ 6 = 21 × 2 = 42*
  (Two marks)
- *126 ÷ 3 (answer incomplete*
  One mark)

Up to 2

[6]

12 216

3

or

54 seen *(angle for mushroom soup)*

OR

Shows or implies a correct method for tomato soup with not more than one computational error, eg:

- 360 − 90 = 240 *(error)*
  240 ÷ 5 = 48
  48 × 4 = 192
- 0.6 × 360
- 25% = chicken
  75% ÷ 5 = 15%
  15% of 360° = 54°
  54° × 4

2

or

Shows the angle representing tomato soup and mushroom soup is 270

OR

60% **or** $\frac{3}{5}$ seen (*as evidence of a correct method for tomato soup*)

OR

Shows or implies a correct method for finding the angle required to represent mushroom soup, eg:

- 360° − 90° = 260° *(error)*
  260° ÷ 5 = 40° *(error)*

OR

Shows or implies a correct method for tomato soup with more than one computational error, eg:

- 360° − 90° = 240° *(error)*
  240° × 4 ÷ 5 = 200° *(error)*

***Do not accept** tomato soup is 270°*

***Do not accept** methods involving drawings of pie charts, without any values given*

Accept equivalent fractions or decimals, eg:

- $\frac{6}{10}$
- *0.6*

***Do not accept** 60 or 60° for 60%*

1

[3]

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

margarine	75g
lard	50g

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

200 ÷ 8 = 25
margarine = 3 × 25
lard = 2 × 25

OR the use of ratio, eg

8 : 3 : 2
80 : 30 : 20
40 : 15 : 10
200 : wrong answer : 50
200 : 75 : wrong answer

Up to 2

[2]

14 (a) Gives both correct values, ie

700 (or 701) and 1000 (or 999)

(in either order)

1

(b) Indicates Elementary and gives a correct explanation that places the speed clearly within the correct section on the graph, eg:

- 30 words in one minute is 300 words in ten minutes
- 30 wpm = 900 words in 30 minutes
- Darren is between 25 and 35 words per minute so she is the same as Darren

Accept minimally acceptable explanation, eg:

- *300 every 10*
- *Point equivalent to 30 words per minute (eg 300 words in 10 minutes) clearly indicated on the graph*
- *25-35, same as Darren*
- *20 × 30 = 600*

! Small number of minutes used, where regions are closer together

Accept points equivalent to 30 words per minute where the number of minutes is 2.5 or greater

eg, accept

- *30 words in one minute is 75 words in* $2\frac{1}{2}$ *minutes*

eg, do not accept

- *I looked at 1 minute on the graph and found where 30 words is on the graph*

***Do not accept** incomplete explanation, eg:*

- *I read up from 10 minutes*
- *Between 25 and 30 words per minute*
- *Same as Darren*

1
U1

[2]