S2

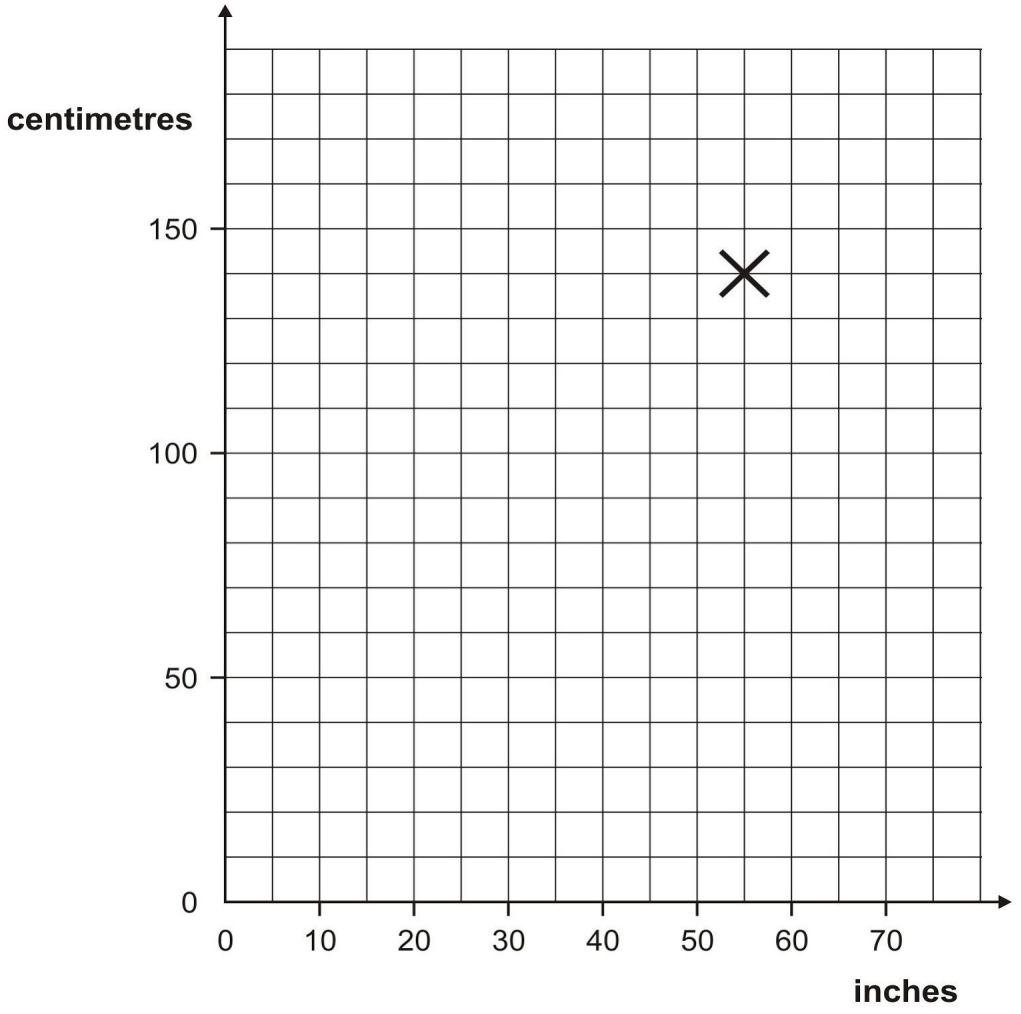
Q1. Kevin measures his height in **inches** and then in **centimetres**.

These are his measurements.

	inches	centimetres
Kevin's height	55	140

The cross on the grid shows Kevin's height in inches and centimetres.

Draw a line on the grid to make a **conversion graph** for **inches** and **centimetres**.



1 mark

Sally is **168cm** tall.

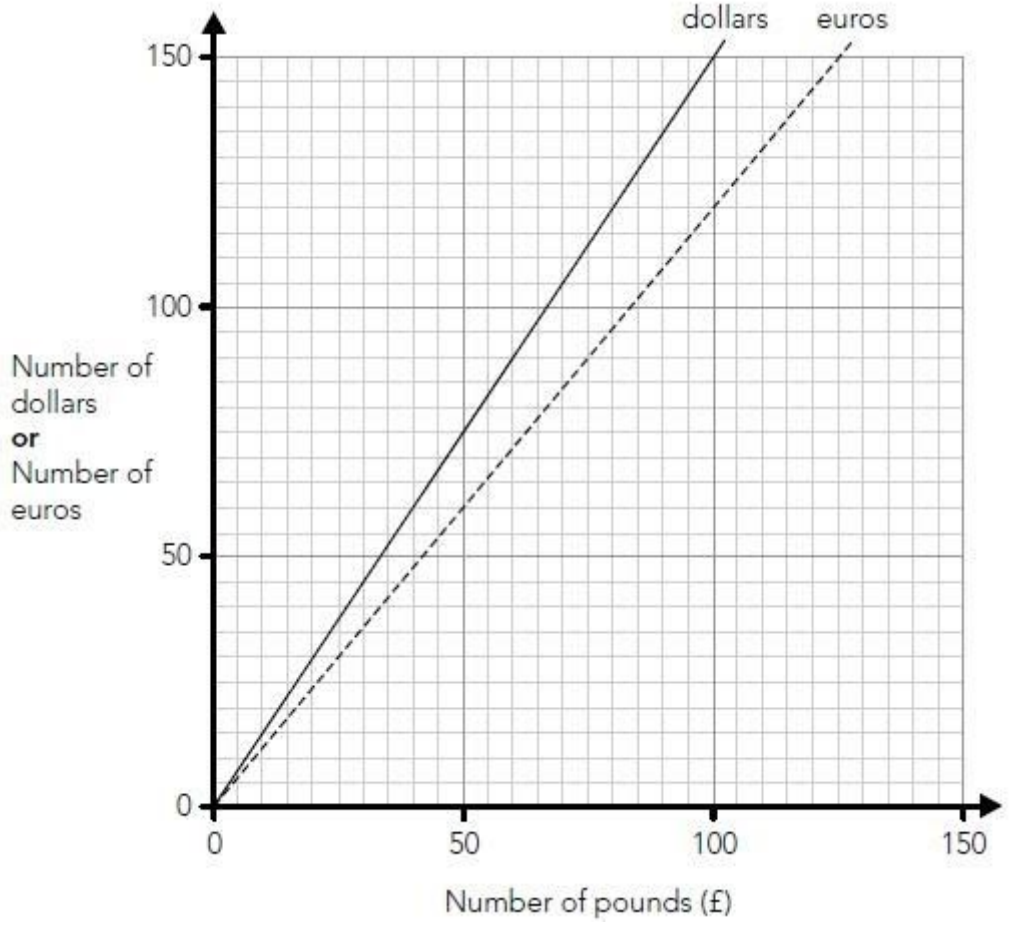
Use the graph to **estimate** Sally's height in **inches**.

inches

1 mark

Q2.

Nik uses this graph to change between pounds (£), dollars and euros.



Use the graph to work out the missing numbers below.

The first one is done for you.

£70	is about the same as	**84 euros**
£70	is about the same as	_____**dollars**
120 dollars	is about the same as	**£**_____
120 euros	is about the same as	_____**dollars**

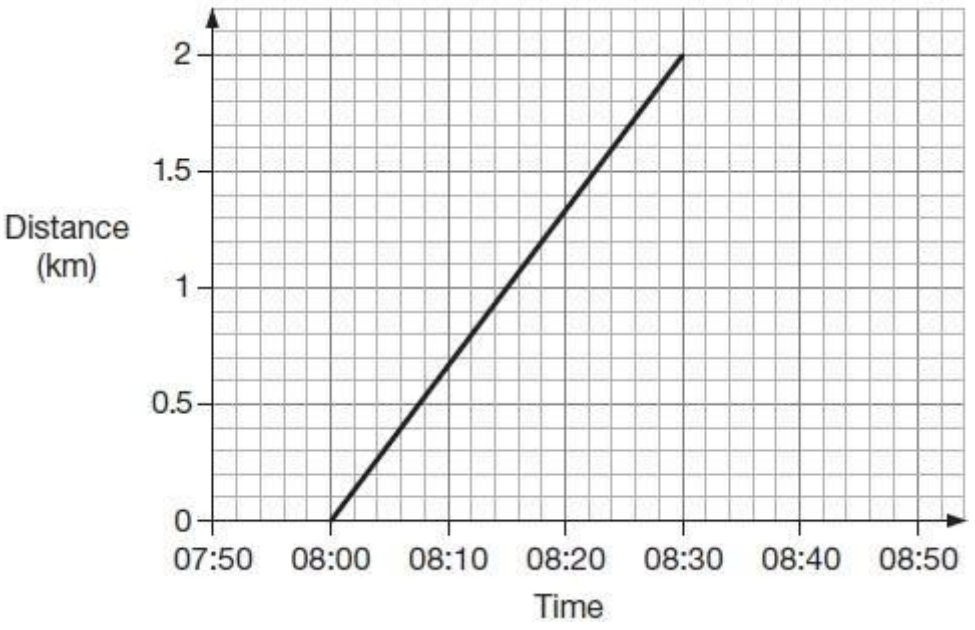
2 marks

Q3.

Alfie and his brother walked from home to their school.

Their school is 2 kilometres from home.

The graph shows information about **Alfie's** journey.



(a) How does the graph show that Alfie walked at a **constant speed** for all of his journey?

_____

1 mark

(b) Alfie's brother left home **10** minutes **before** Alfie.

He arrived at school **20** minutes **after** Alfie.

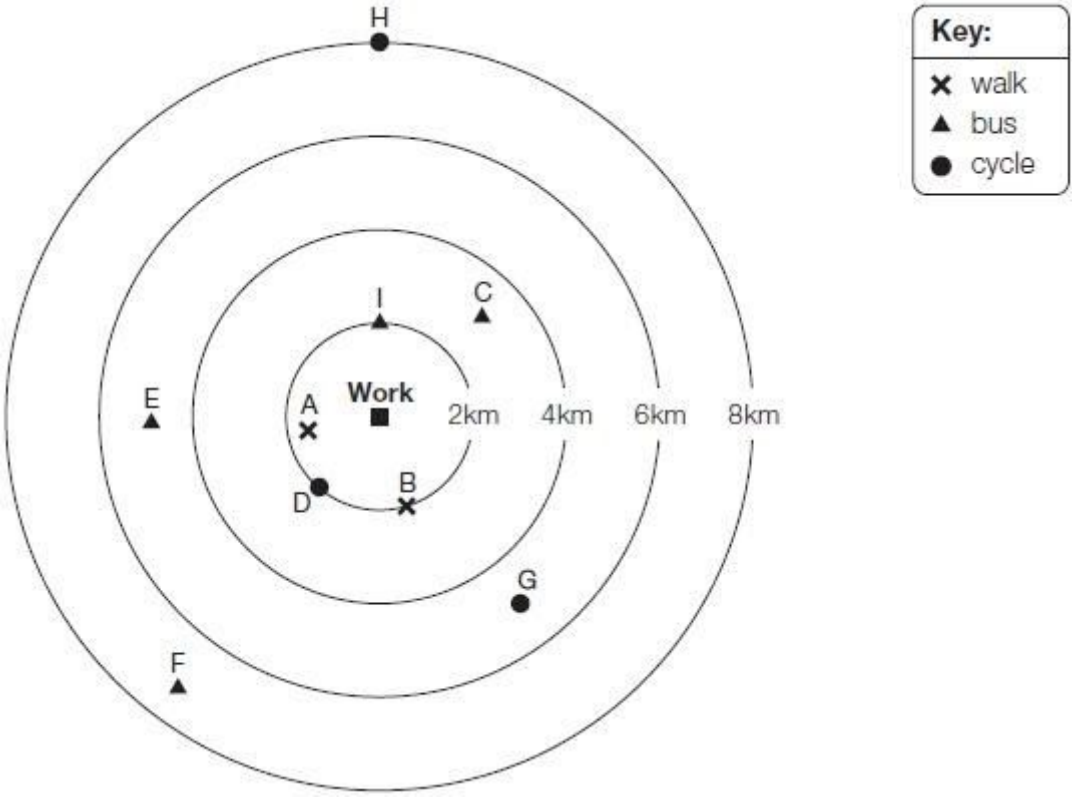
He walked at a **constant speed** for all of his journey.

At what time did Alfie overtake his brother?

1 mark

Q4.

This diagram shows how nine people travel to work and how far away they live.



How many people live **more** than 4 km from work?

people

1 mark

How far from work does person **G** live?

km

1 mark

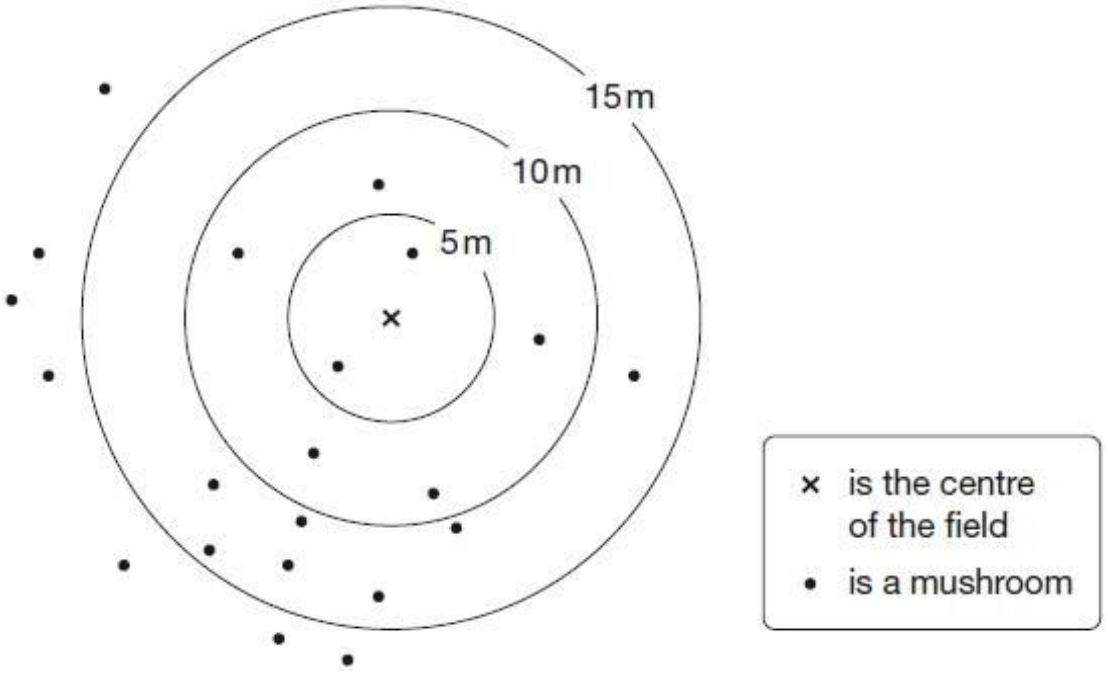
Write the letter of the person who lives 2 km from work and cycles.

1 mark

Q5.

Class 6 did a survey of mushrooms growing in a field.

The diagram shows the distances of mushrooms from the centre of the field.



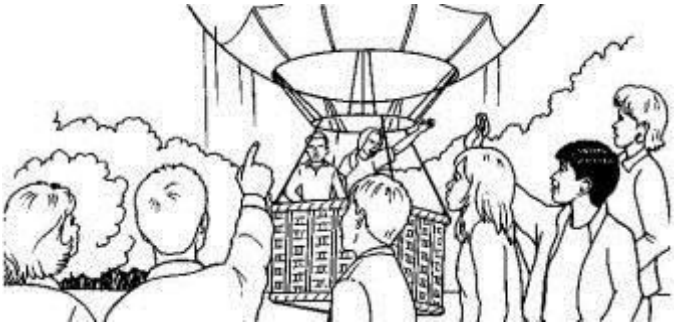
How many mushrooms were more than 10 metres from the centre?

1 mark

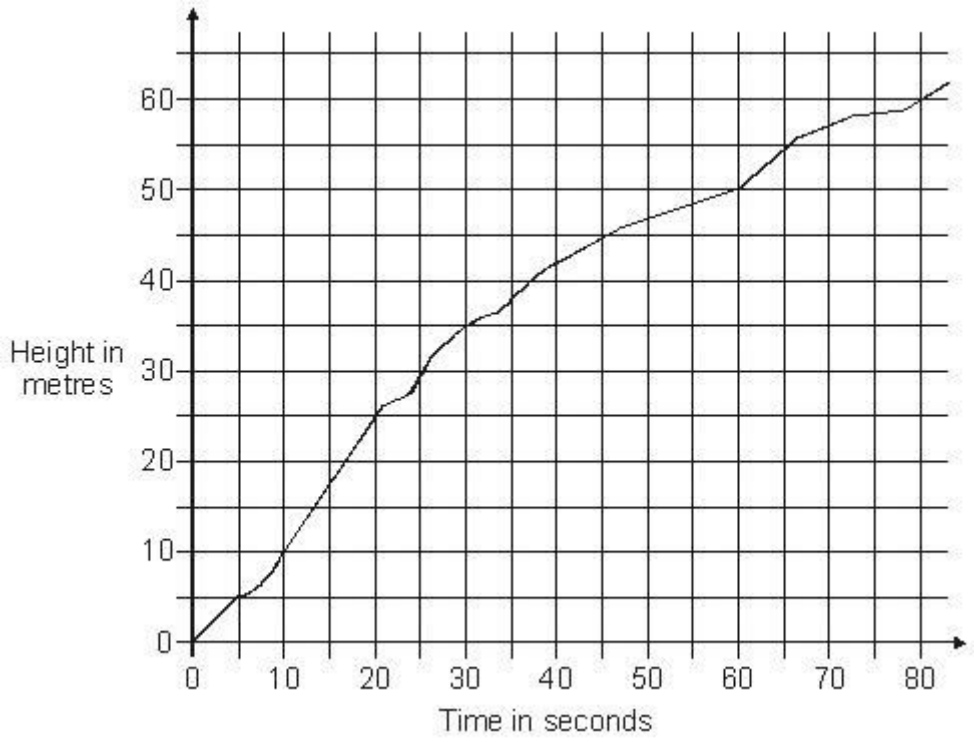
What **fraction** of the mushrooms were less than 10 metres from the centre?

1 mark

Q6.



This graph shows the height of a balloon at different times.



From the graph, find the height of the balloon at 50 seconds.

m

1 mark

Use the graph to find out how long it took the balloon to rise from 30 metres to 60 metres.

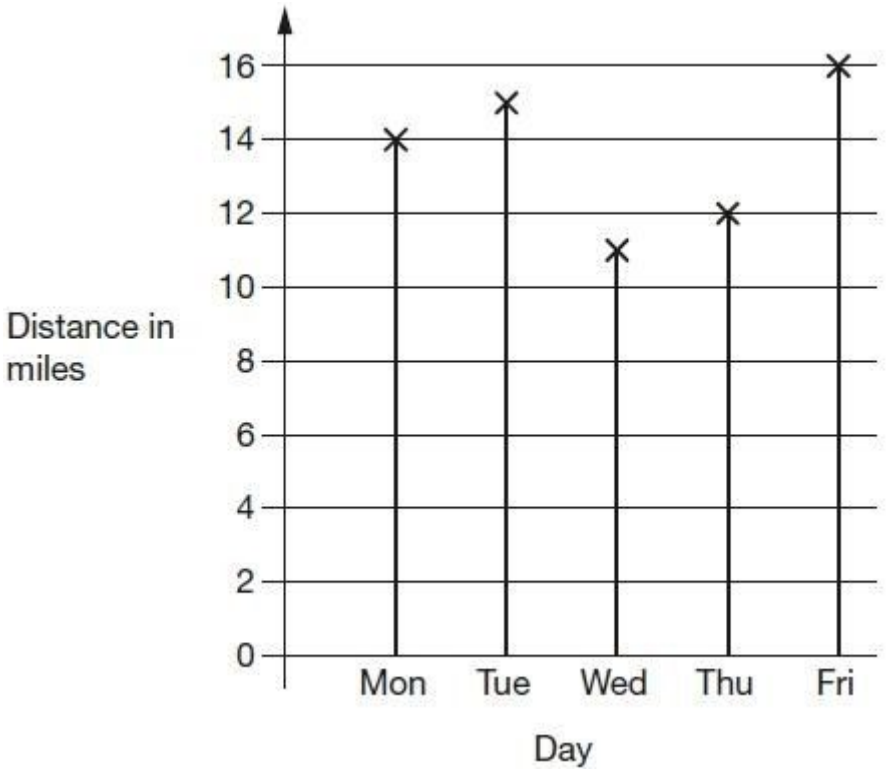
seconds

1 mark

Q7.

Amy went on a cycling holiday.

This chart shows how far she cycled each day.



How much **further** did Amy cycle on Friday than on Wednesday?

miles

1 mark

How far did Amy cycle **altogether** on the three days she cycled the most?

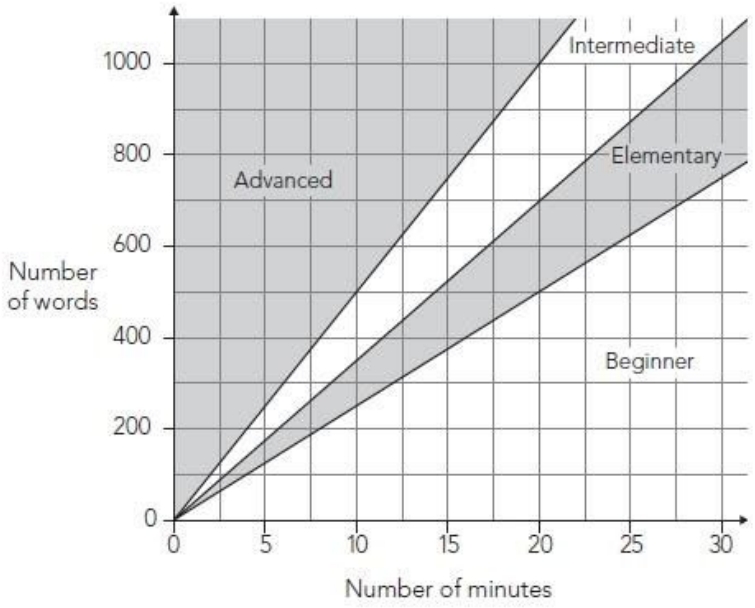
miles

1 mark

Q8.

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?

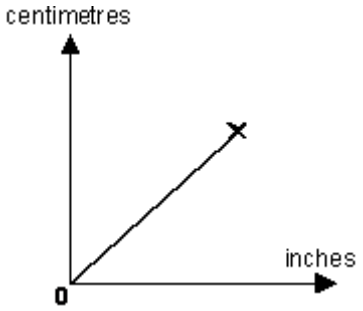
☐	Advanced	☐	Intermediate	☐	Elementary	☐	Beginner

Explain how you know.

1 mark

Q1.

(a) Straight line drawn on the graph from the origin to the given point or beyond.



*The line drawn must be straight **AND** connect the given point with the origin.*
Accept a straight line which misses the given point and/or the origin by up to 1 mm.

1

(b) Answer in the range of 65 to 67 inclusive **OR** answer consistent with the line drawn on graph in ***2a***.

Accept answers apparently based upon calculation, provided the answer lies within the given range.

1

[2]

Q2.

105 ± 1

then

80 ± 1

1

150 ± 1

1
U1

[2]

Q3.

Gives a correct interpretation of the graph, eg:

- It is a straight line
- It goes up steadily
- The angle of the line stays the same
- The gradient of the line is constant

Accept minimally acceptable explanation, eg:

- *It is straight*
- *It doesn't bend*
- *It is a diagonal*

Do not accept *incomplete or ambiguous explanations that do not sufficiently imply a constant speed and / or do not demonstrate the relationship holds for the entire graph, eg:*

- *The line goes straight up*
- *It is not wobbly*
- *It is level*
- *Every 5 mins he walks the same distance*
- *He walks 1km in the first 15 mins and 1km in the second 15 mins*

! Values read from graph

Accept, provided it is clear the relationship holds for the entire graph.

Values should be accurate within +/− 0.1km and / or +/− 2 minutes, eg:

- *0.7km every 10 minutes*
- *Every 7.5 minutes he walks about half a km*

! Calculation of kilometres per hour

Accept values in the range 3.7 to 4.3km per hour inclusive.

1

(b) 08:10

! Accept values between 08:09 and 08:11 inclusive

! Time

1

[2]

Q4.

(a) 4

1

(b) Gives an answer in the range $4\frac{1}{2}$ km to $5\frac{1}{2}$ km exclusive.

Do not *accept* $4\frac{1}{2}$ ***OR*** $5\frac{1}{2}$

1

(c) D

1

[3]

Q5.

(a) 14

1

(b) $\frac{1}{3}$

Accept equivalent fractions eg $\frac{7}{21}$

Ignore subsequent work if $\frac{7}{21}$ *is simplified incorrectly.*

Accept follow through in part (b) of $\frac{7}{a+7}$

1

[2]

Q6.

(a) Answer in the range 46 m to 47 m inclusive

1

(b) 55

1

[2]

Q7.

(a) 5

1

(b) 45

1

[2]

Q8.

(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]