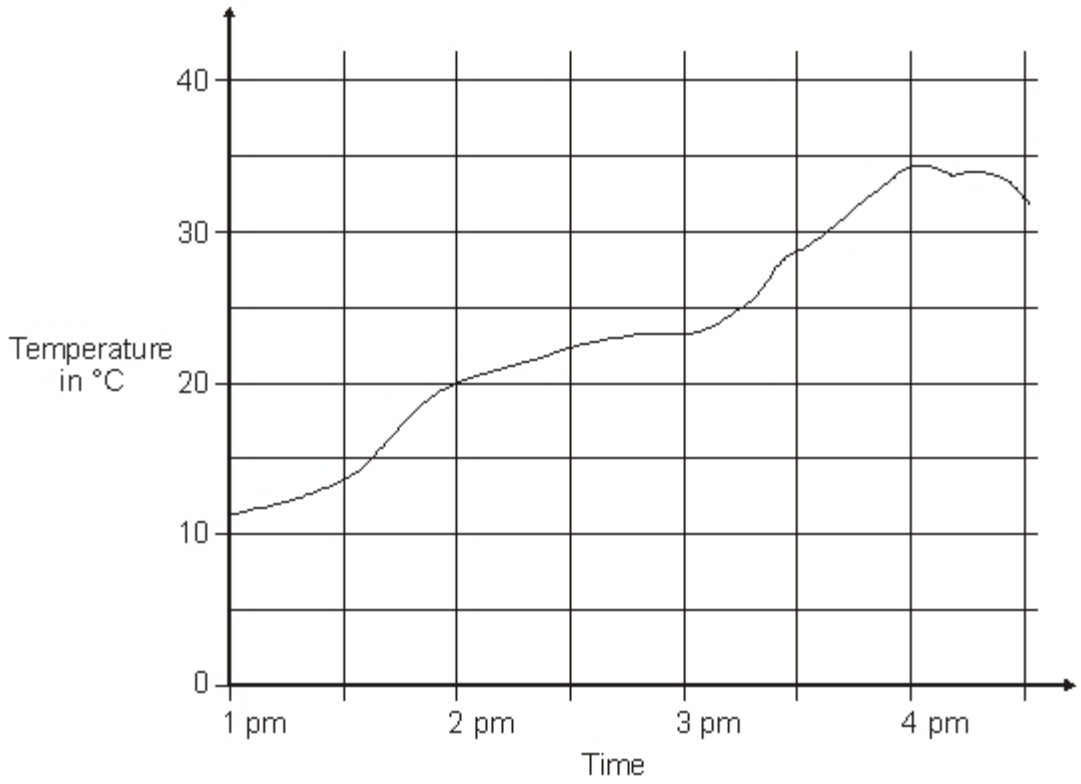
1. This graph shows the temperature in a greenhouse.



Use the graph to find the time when the temperature was 25°C.

1 mark

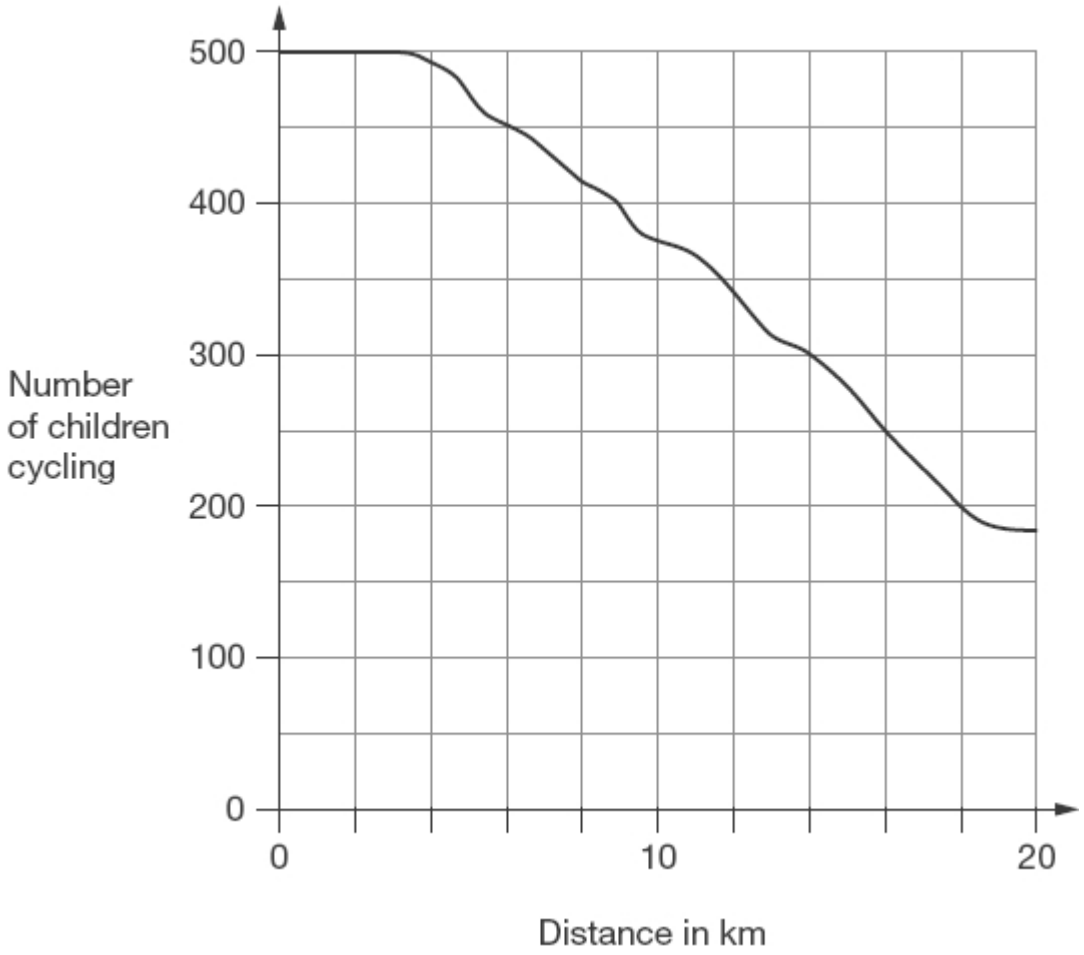
Use the graph to find the difference between the temperature at 2pm and the temperature at 4pm.

degrees

1 mark

2. 500 children started a 20 kilometre sponsored cycle ride.

This graph shows how far they cycled.



At what distance were exactly half of the children still cycling?

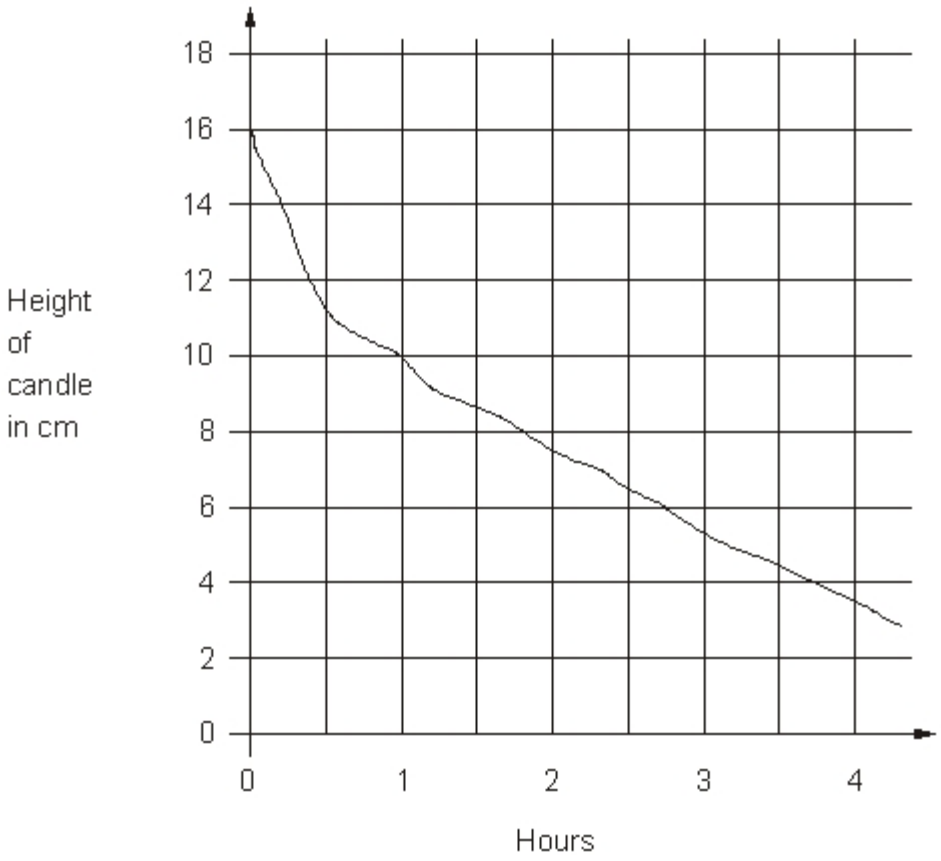
km

1 mark

Estimate how many children completed the 20 kilometre cycle ride.

1 mark

3. This graph shows the height of a candle as it burns.



Look at the graph.

What is the height of the candle after 2 hours?

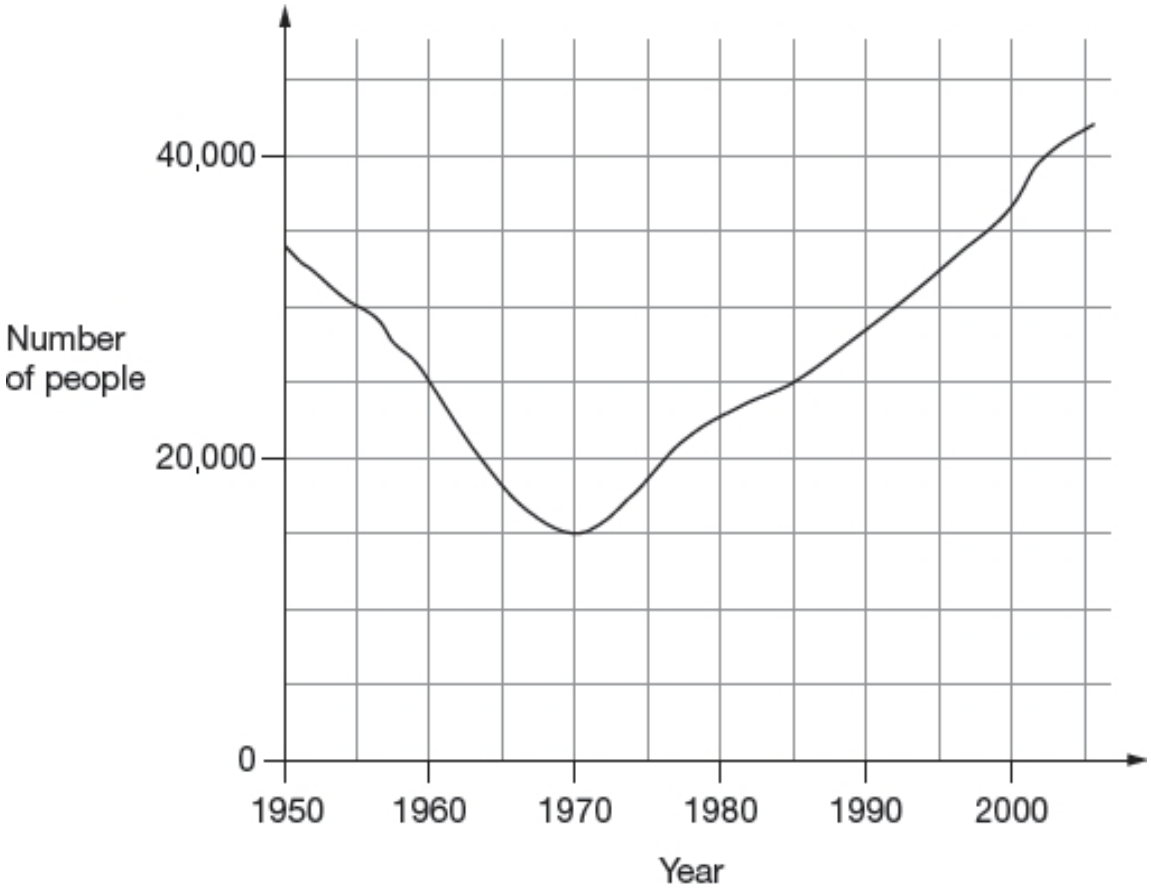
cm

1 mark

How long does the candle take to burn down from 16 cm to 4 cm?

1 mark

4. This graph shows the number of people living in a town.



Look at the graph.

How many people lived in the town in 1985?

1 mark

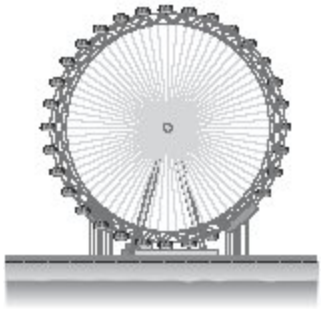
In which year was the number of people the same as in 1950?

1 mark

Find the year when the number of people first went below 20,000

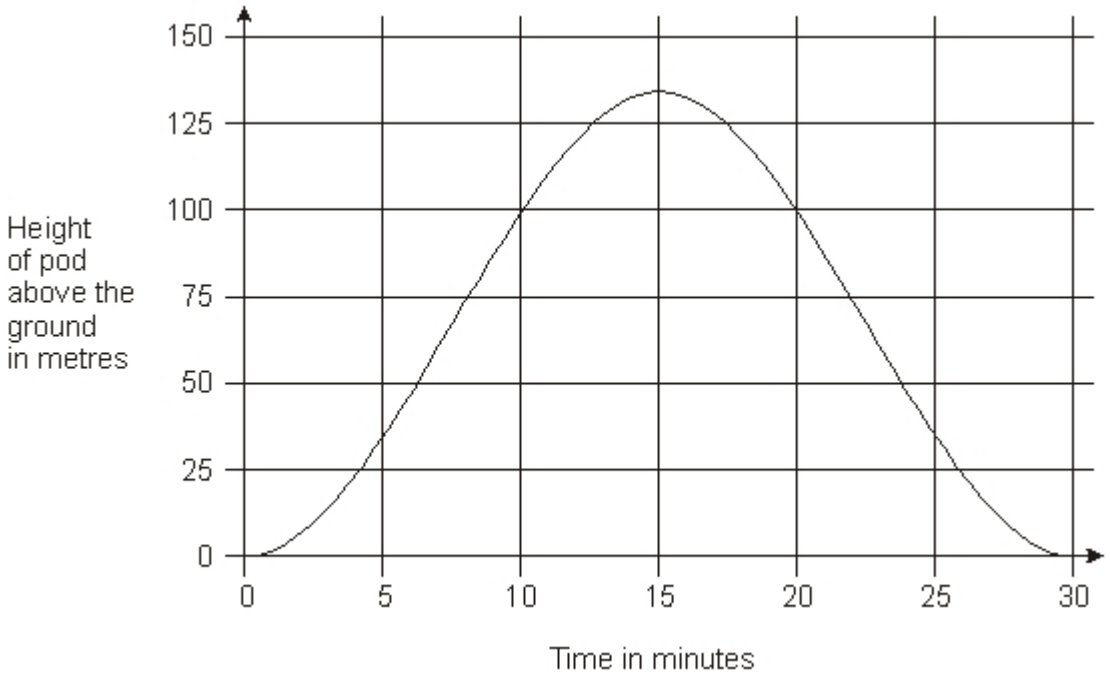
1 mark

5. The London Eye is a big wheel with pods to carry passengers.



It takes 30 minutes for the wheel to make a complete turn.

This graph shows the height of a pod above the ground as the wheel turns.



How long from the start does it take the pod to reach a height of 75 metres?

minutes

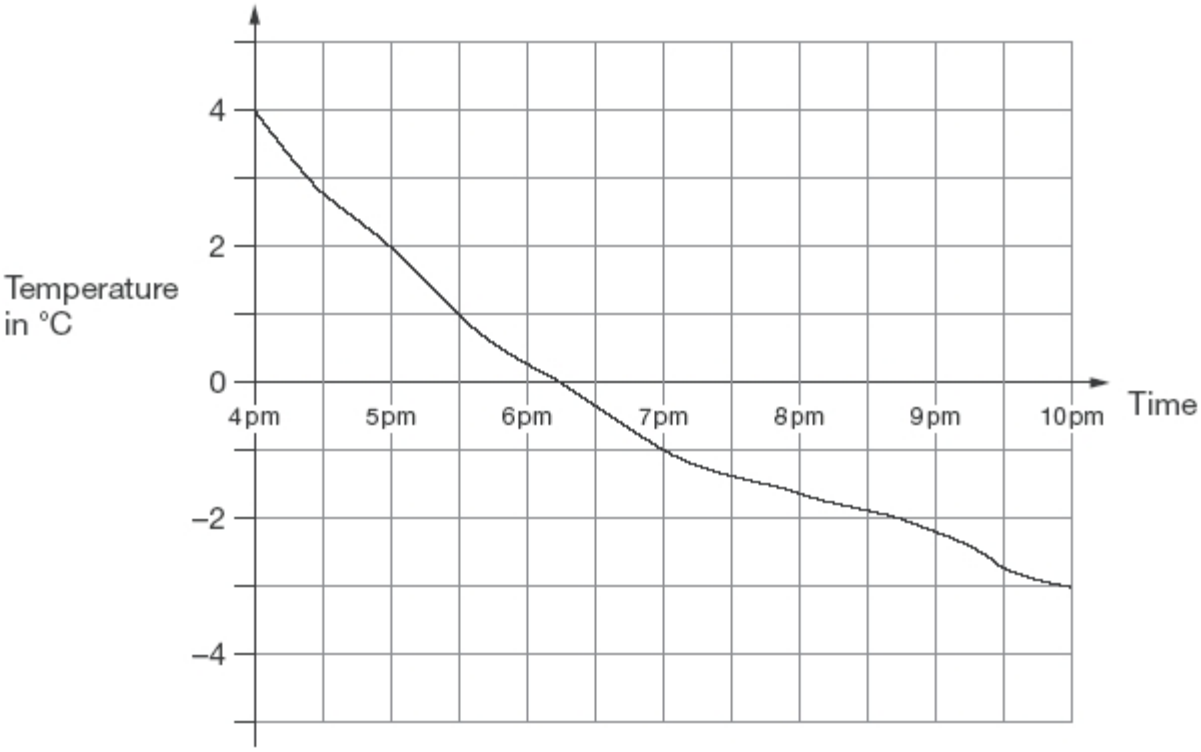
1 mark

How many metres above the ground is the pod at its highest point?

m

1 mark

6. This graph shows the outside temperature from 4pm to 10pm on a day in winter.



At what time was the temperature −2°C?

1 mark

How many degrees did the temperature drop from 5pm to 7pm?

degrees

1 mark

7. Here is part of the morning bus timetable from Winton to Yansley.

Winton	9:35	9:55	10:15	10:35
Ingham	9:45	10:05	10:25	10:45
Carston	10:01	10:21	10:41	11:01
Dubley	10:23	10:43	11:03	11:23
Yansley	10:55	11:15	11:35	11:55

How many minutes does the bus take to get from Ingham to Dubley?

minutes

1 mark

Megan is in Carston.

She wants to be in Yansley before 11:30

What is the time of the latest bus she can take from Carston?

:

1 mark

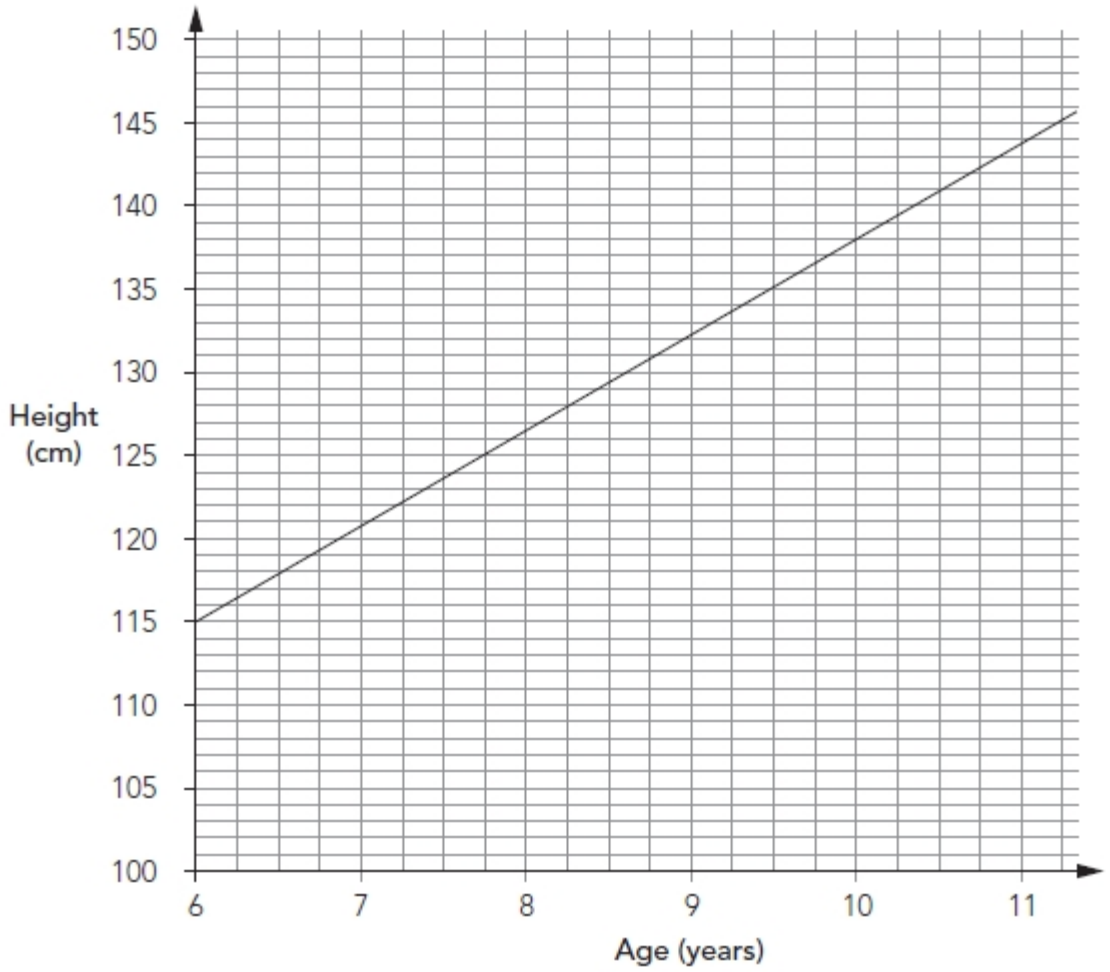
One morning, the 10:35 bus from Winton gets to Carston 3 minutes early.

What time does it get to Carston?

:

1 mark

8. The graph shows the average heights of girls in the UK from age 6 – 11 years.



Emily is **1.38 m** tall.

She is the **average** height for her age.

How old is she?

1 mark

Zoe is $9\frac{1}{2}$ **years old**.

She is also 1.38 m tall.

How much taller than average is she?

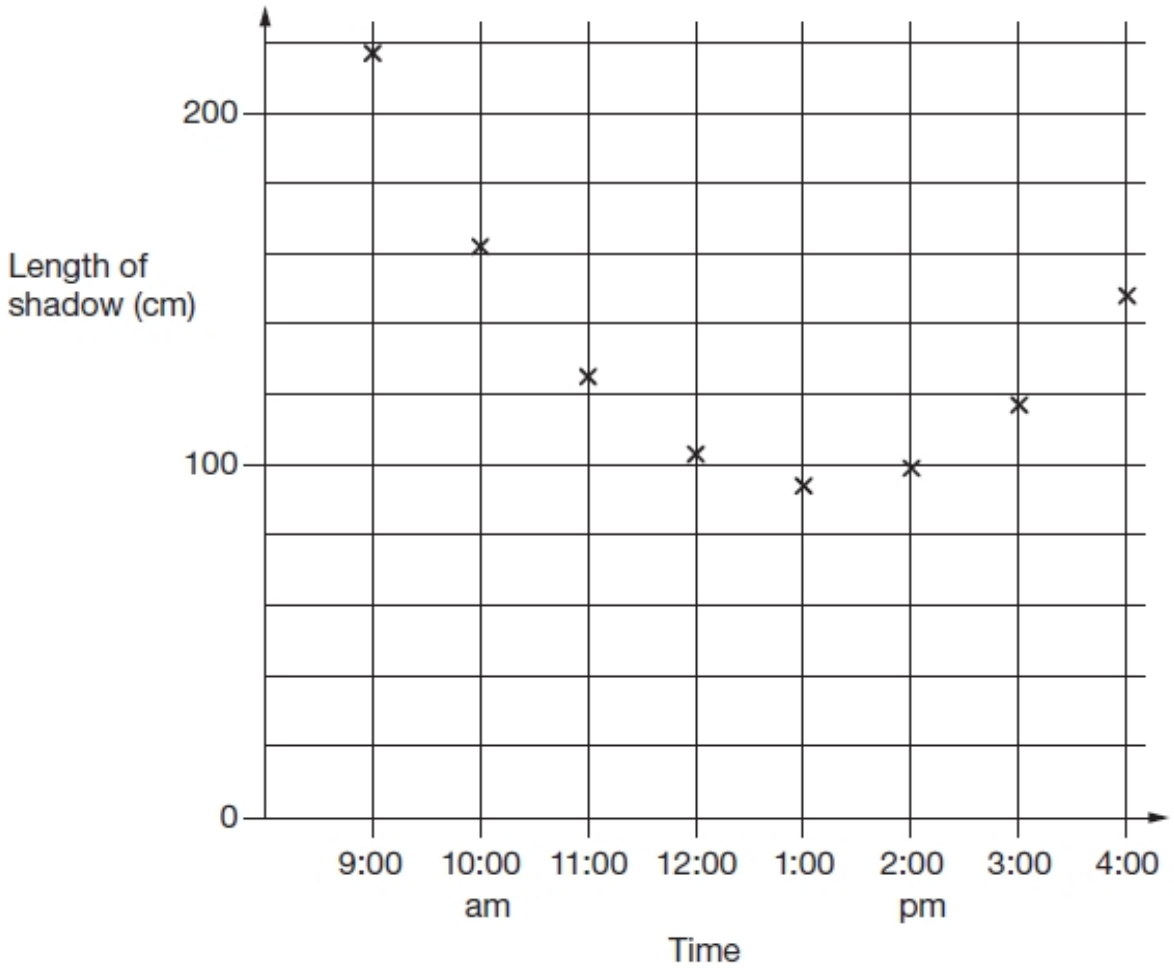
Give your answer in centimetres.

cm

1 mark

9. Kirsty measured the length of her shadow every hour on one sunny day.

She plotted her results on this graph.



Look at the graph.

Estimate the length of Kirsty's shadow at 3:30 pm.

cm

1 mark

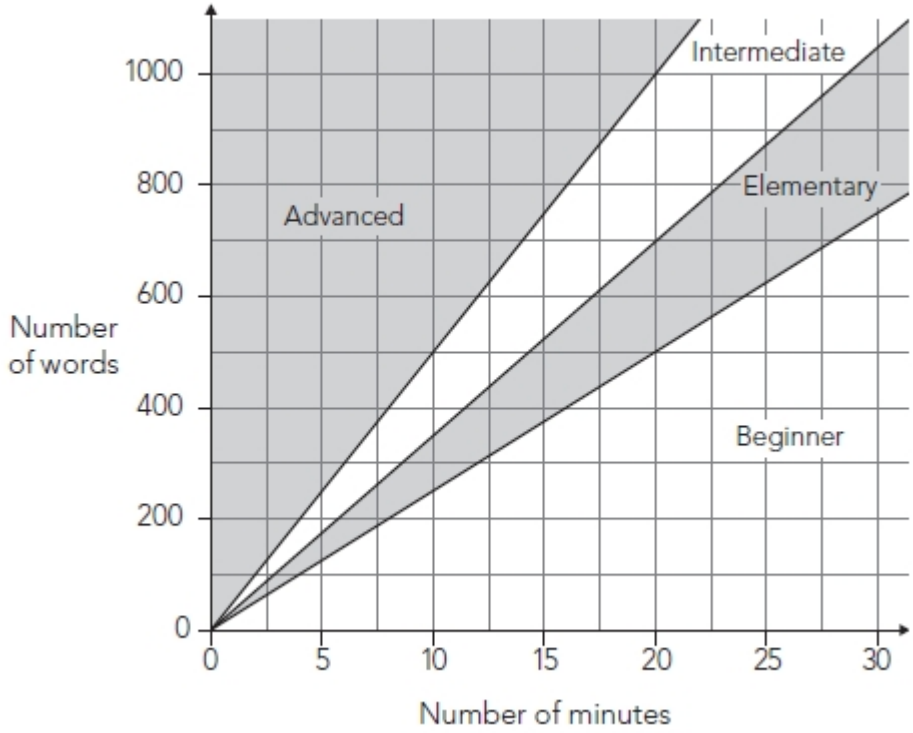
Estimate a time when her shadow was 180 centimetres long.

:

1 mark

10. 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 _____

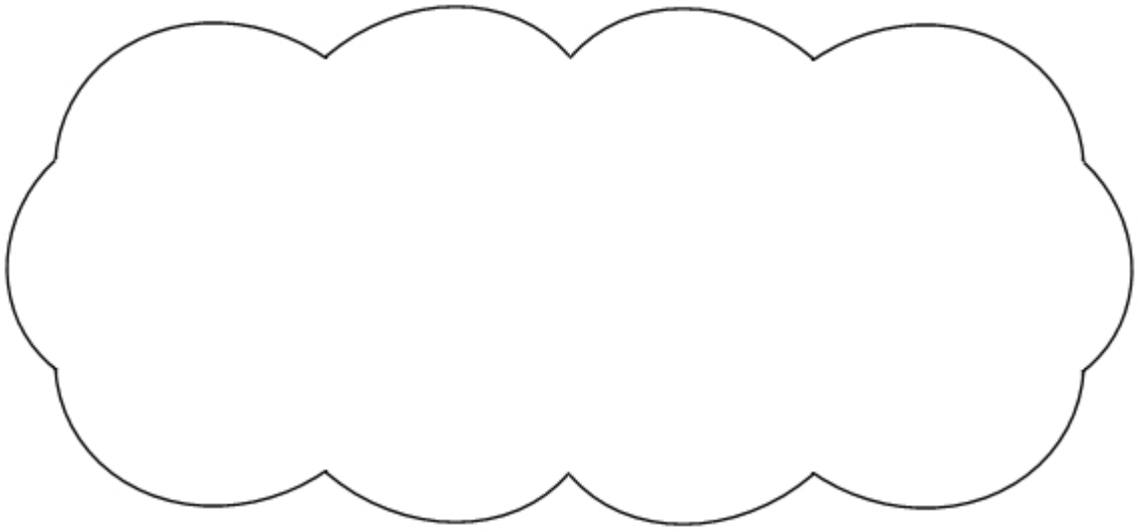
1 mark

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

What level is Kath's typing?

☐ Advanced ☐ Intermediate ☐ Elementary ☐ Beginner

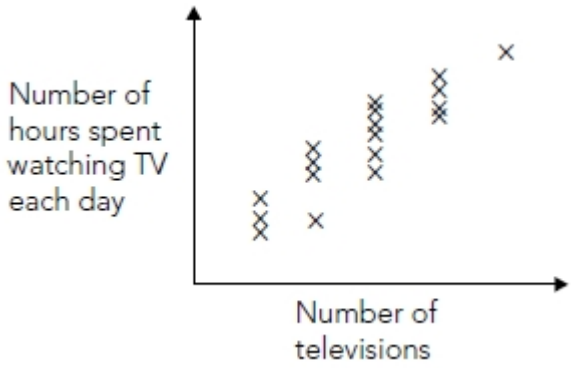
Explain how you know.



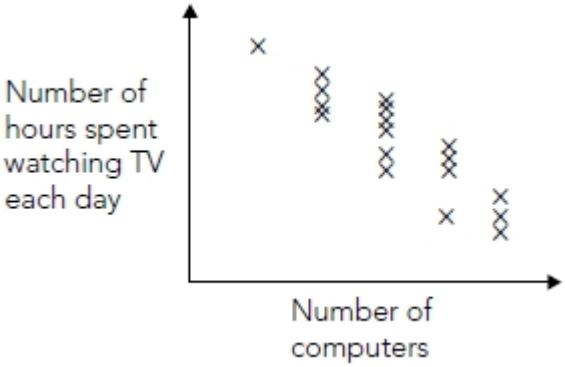
1 mark

11. Here are three scatter diagrams, labelled A, B and C.

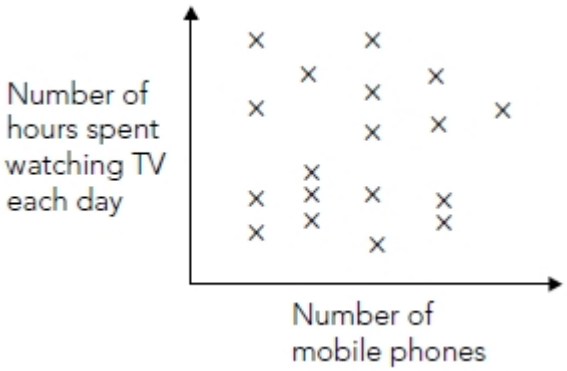
Scatter diagram A



Scatter diagram B



Scatter diagram C



Kemi writes:

Scatter diagram **A** shows that *the more televisions a person has in their home the more hours they spend watching television*

Now complete the sentences below.

Scatter diagram **B** shows that_____

_____

_____

_____

1 mark

Scatter diagram **C** shows that_____

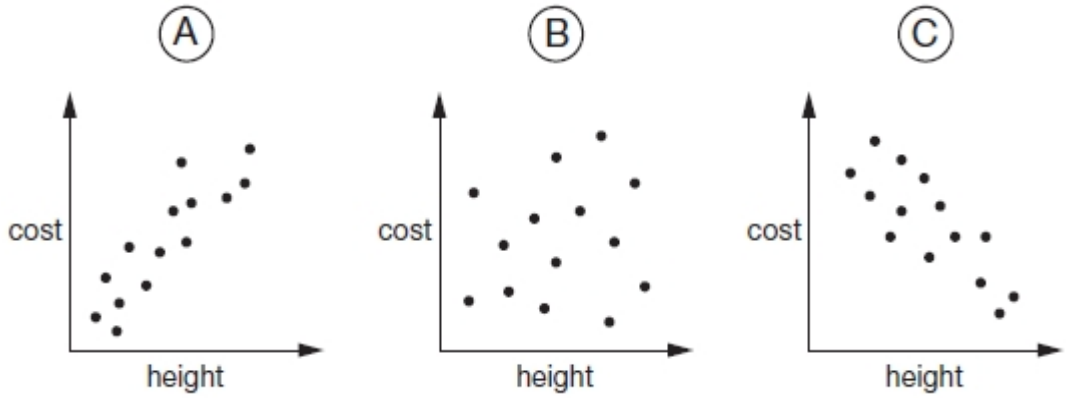
_____

_____

_____

1 mark

12. Here are three scatter graphs showing the heights of people and the cost of clothes.



Chen says,

'The taller you are, the more your clothes cost.'

Megan says,

'The shorter you are, the more your clothes cost.'

Alfie says,

'There is no relationship between your height and what your clothes cost.'

Write the letter of each scatter graph that shows what each person says.

Chen_____ Megan _____ Alfie _____

1 mark

13. (a) **Complete** this tally chart.

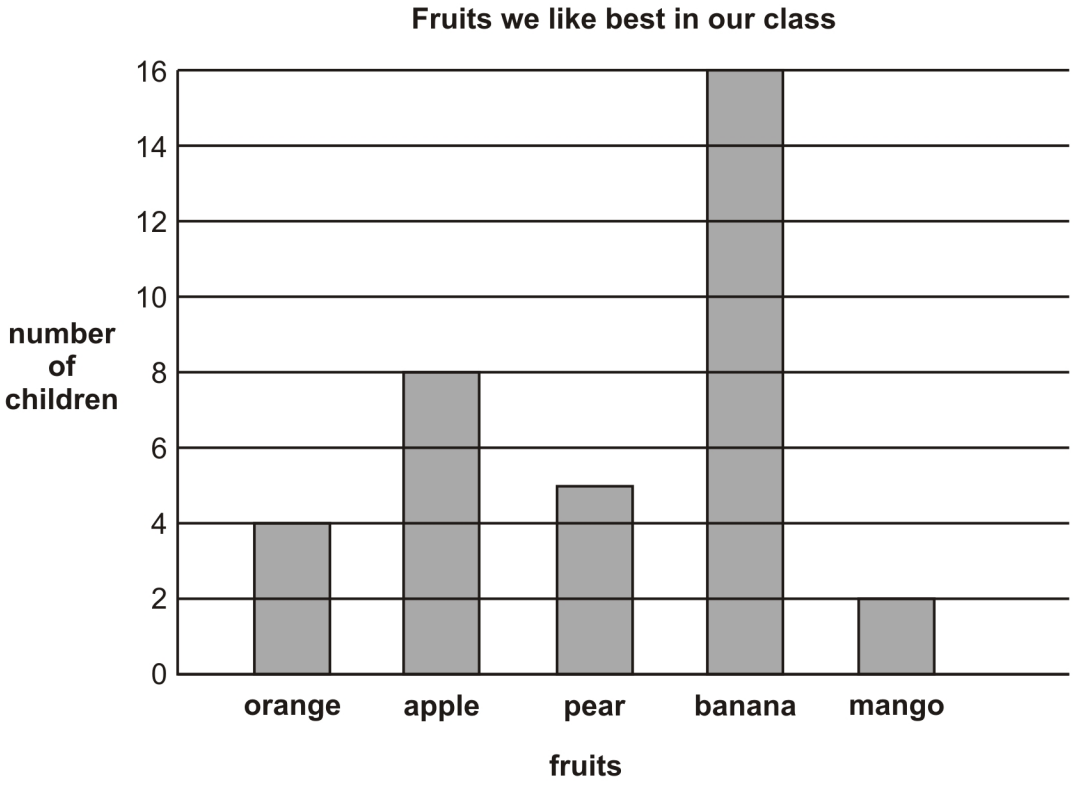
Fruits we like best in our class

fruit	tally	number of children
orange		5
apple	𝍸 ||	8
pear	|||	3
banana	𝍸 𝍸 𝍸 |	
mango	||	2

1 mark

(b) The children made this graph from the tally chart.

Put a cross (✗) on the two columns which are wrong.



1 mark

14.

Tally of traffic passing school

lorries	𝍸 | | |	8
cars	𝍸 𝍸 | | |	
bicycles	𝍸 |	
vans	𝍸	
motorbikes	𝍸 | | |	4

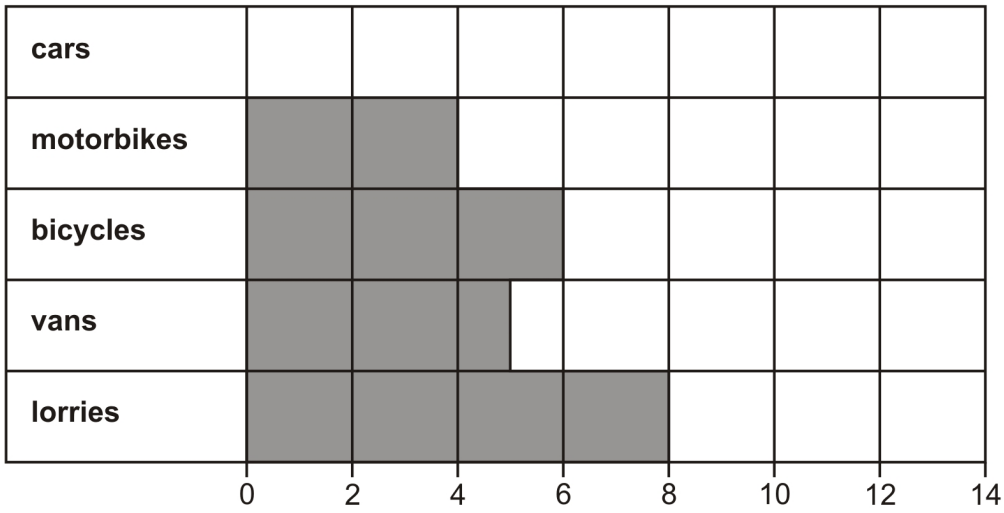
(a) Complete the tally.

1 mark

(b) How many vehicles were seen altogether?

1 mark

(c) Complete this graph using the tally.



1 mark

15.

Here is the morning timetable for Chen's class this week.

Time	Mon	Tue	Wed	Thu	Fri
9:00 am – 10:30 am	Maths	English	Maths	English	Maths
10:30 am – 11:00 am	Break	Break	Break	Break	Break
11:00 am – 12:00 pm	English	Maths	Science	Maths	English

What is the **total** number of hours for **English** on this timetable?

hours

1 mark

16. This table shows the number of people living in various towns in England.

Town	Population
Bedford	82,448
Carlton	48,493
Dover	34,087
Formby	24,478
Telford	166,640

What is the **total** of the numbers of people living in Formby and in Telford?

1 mark

What is the **difference** between the numbers of people living in Bedford and in Dover?

1 mark

17. Here is a diagram for sorting numbers.

Write **one number** in each box.

One is done for you.

	multiple of 5	**not** a multiple of 5
multiple of 3	30	
not a multiple of 3		

2 marks

18. Megan likes honey, but not jam.

Alfie likes honey and jam.

Chen does not like honey or jam.

Donna only likes jam.

Write the children's names in the correct parts of the sorting diagram.

	likes honey	does **not** like honey
likes jam		
does **not** like jam		

2 marks

19. These are some prices in a fish and chip shop.

Fish £2.30	Peas 35p
Sausage £1.80	Curry sauce 40p
Chips (small bag) 60p	Bread roll 30p
Chips (large bag) 90p	Pickled onion 28p

Alfie buys one fish, a large bag of chips and a pickled onion.

How much does he pay?

£

1 mark

Megan buys a sausage and a bread roll.

Chen buys a small bag of chips and a curry sauce.

How much **more** does Megan pay than Chen?

Show your method

£

2 marks

20. There are 90 children in Year 6 at Woodland Junior School.

They are split into three classes.

Class	Number in class
6M	27
6P	33
6T	30

Each child chose football **or** netball **or** hockey.

In **6M**, 13 children chose hockey.
The rest of the class were split equally between football and netball.

In **6P**, 9 children chose netball.
Twice as many children chose football as chose hockey.

In **6T**, the ratio of children who chose
football to netball to hockey was 1:2:3

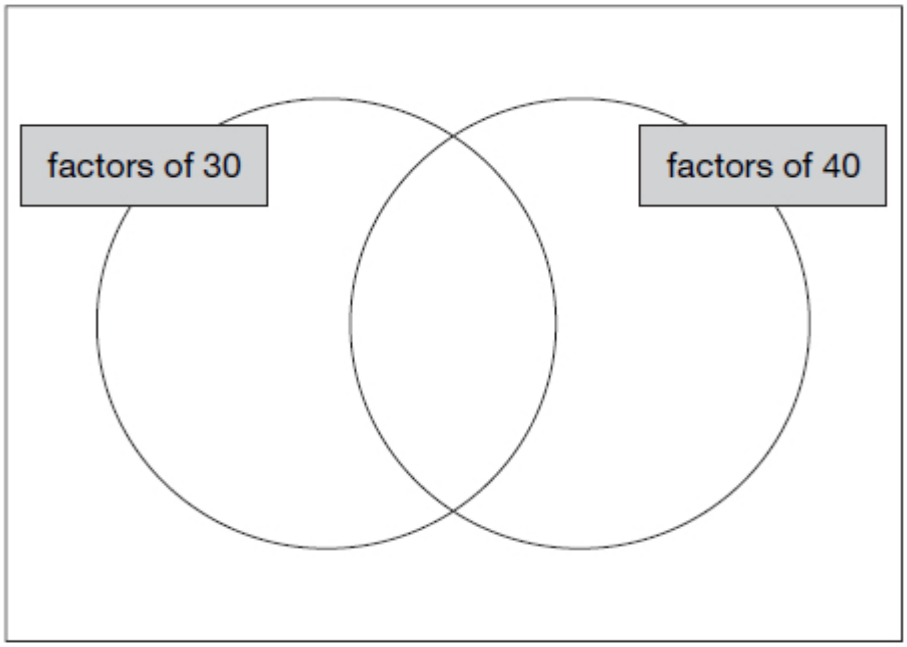
Complete this table.

Class	Number in class	Football	Netball	Hockey
6M	27			13
6P	33		9	
6T	30			

2 marks

21. Write these numbers in the correct places on the diagram.

5 **6** **7** **8**



2 marks

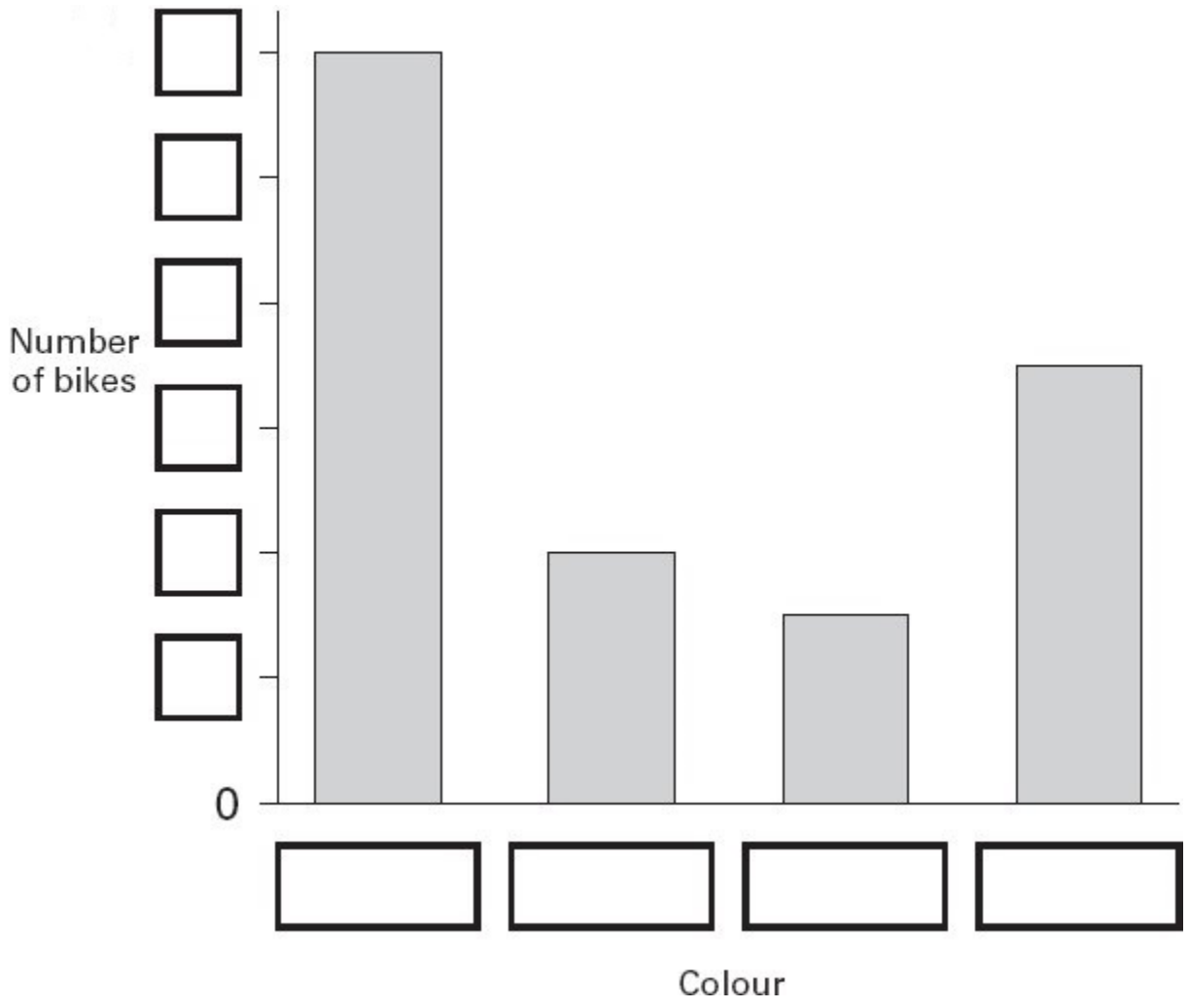
22. Robbie collected information about the colours of some bikes.

Here are his results.

Colour	Number of bikes
green	4
red	7
blue	12
pink	3

This bar graph shows the information from the table.

Fill in **all** the missing labels.

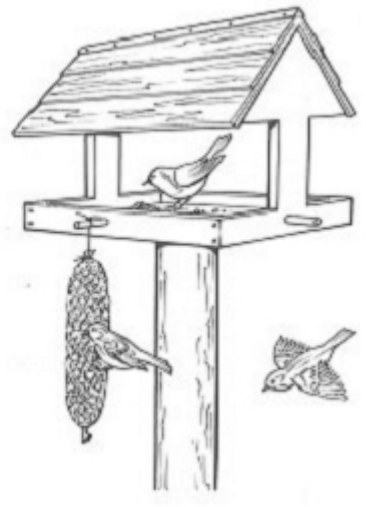


2 marks

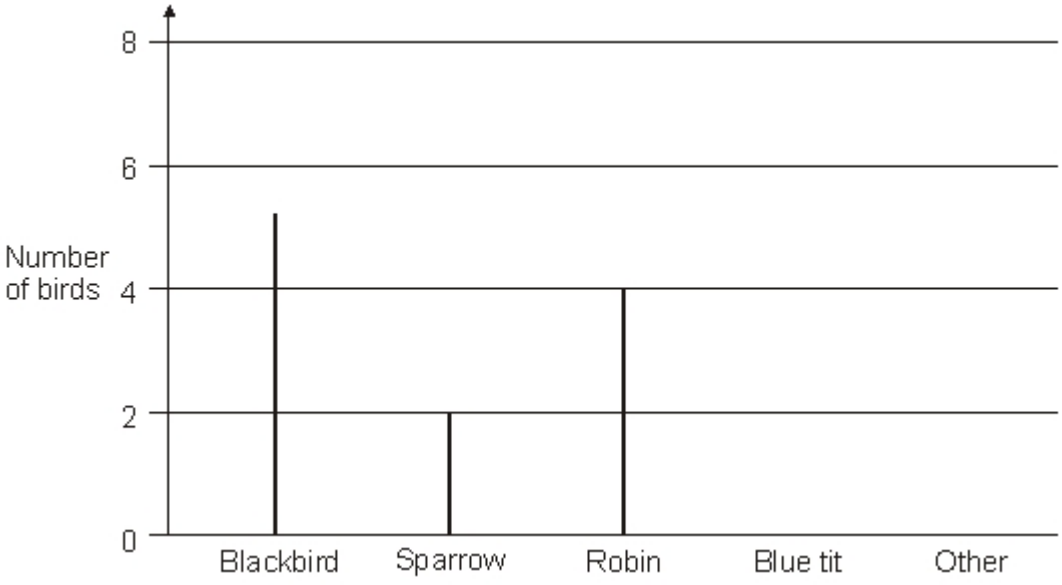
23. Rosie collects data about birds visiting a bird table.

Here are her results.

Blackbird	𝍸
Sparrow	||
Robin	𝍸 |
Blue tit	|||
Other	𝍸 |



Draw **two** more lines to complete the graph.



1 mark

Rosie saw **20 birds** altogether.

What **fraction** of the birds were blackbirds?

1 mark

24. Here is information about pupils in a class.

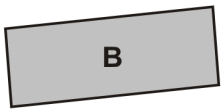
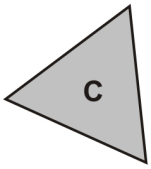
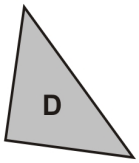
- The total number of pupils is 30
- 26 of the pupils do not wear glasses.
- A quarter of the pupils who do wear glasses are boys.
- There are 2 more boys than girls.

Use the information to fill in the missing numbers in the table below.

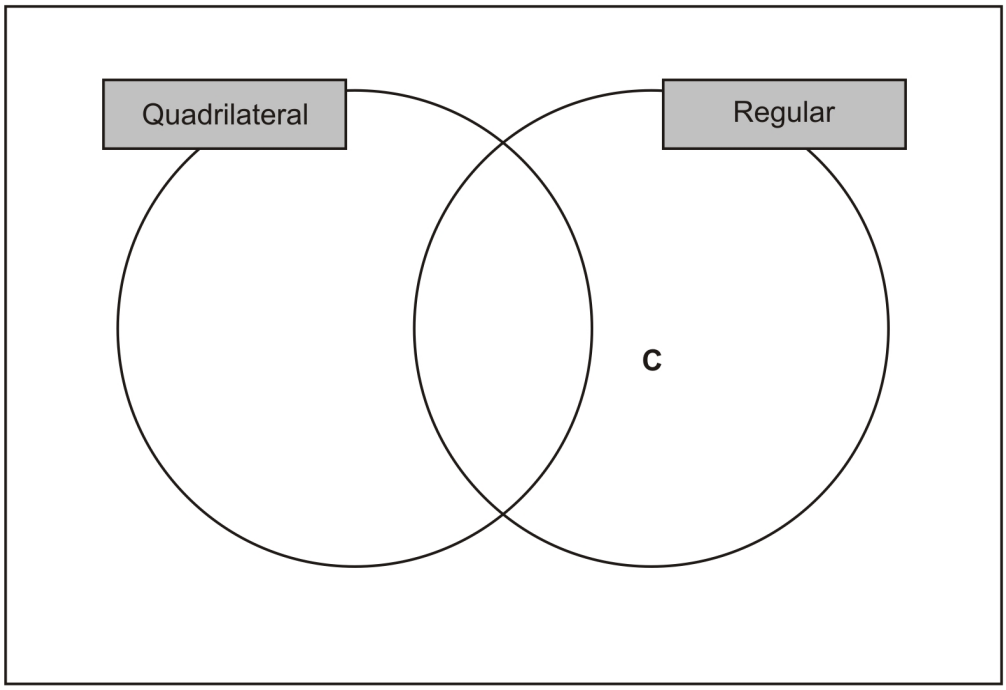
	Number who **do** wear glasses	Number who **do not** wear glasses	Total
Number of boys			
Number of girls			
Total			30

2 marks

25. Here are four shapes in a Carroll diagram.

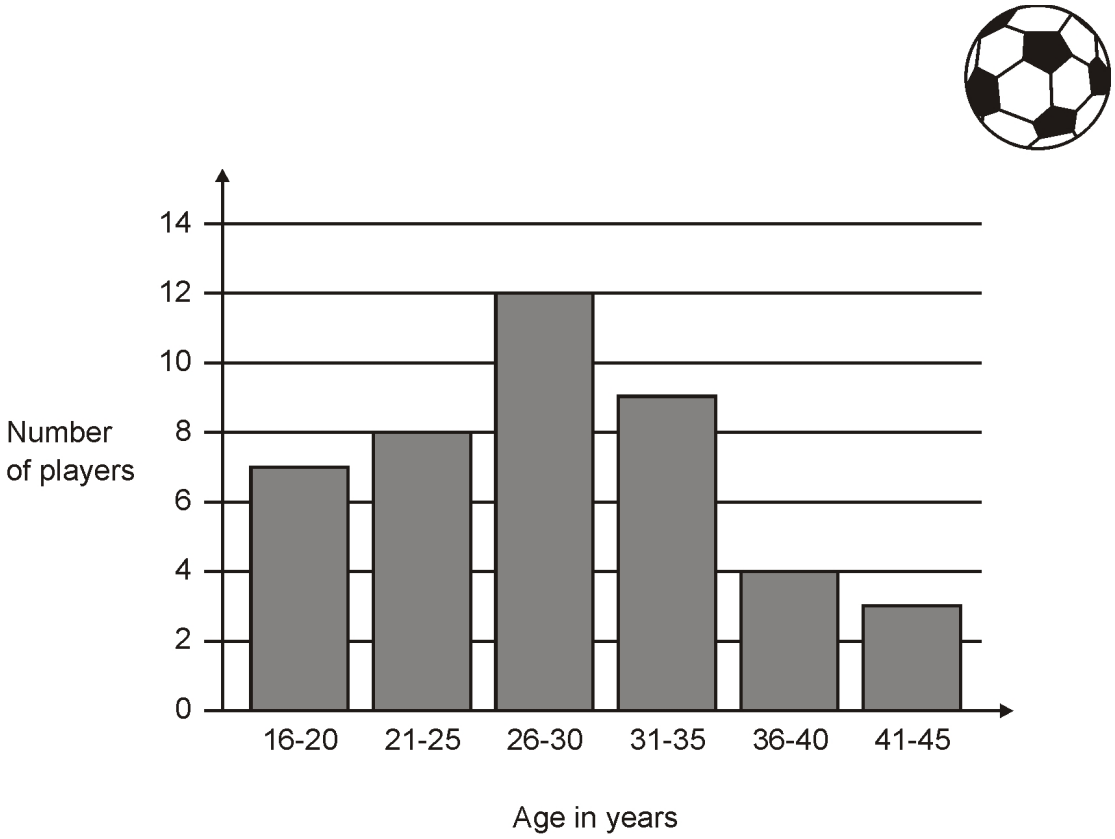
	Regular	Not regular
Quadrilateral		
Not a quadrilateral		

Use this information to write the letters **A**, **B** and **D** in the Venn diagram below.



2 marks

26. This graph shows the age of players at a football club.



How many players are aged 30 or younger?

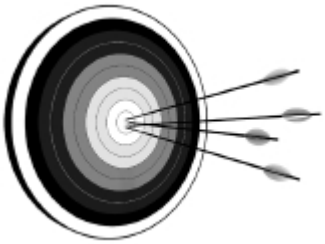
1 mark

A player aged 36 and a player aged 39 join the club.

Add this information to the graph above.

1 mark

27. Archery is an Olympic sport.



In 2008, two archers called Park and Zhang were in the women's final.

Both archers shot **12 arrows**.

Zhang won the final **by 1** point.

Complete the table for Zhang below.

You can use the space to show your calculations.

Show your method

Name of archer: **Park**	
What she scored with her **12 arrows**	
Number of points	Frequency
7	0
8	4
9	3
10	5

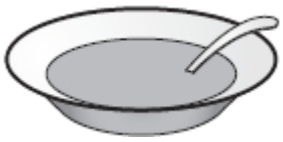
Name of archer: **Zhang**	
What she scored with her **12 arrows**	
Number of points	Frequency
7	1
8	0
9	
10	

2 marks

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

The choices were:

- tomato
- chicken
- mushroom

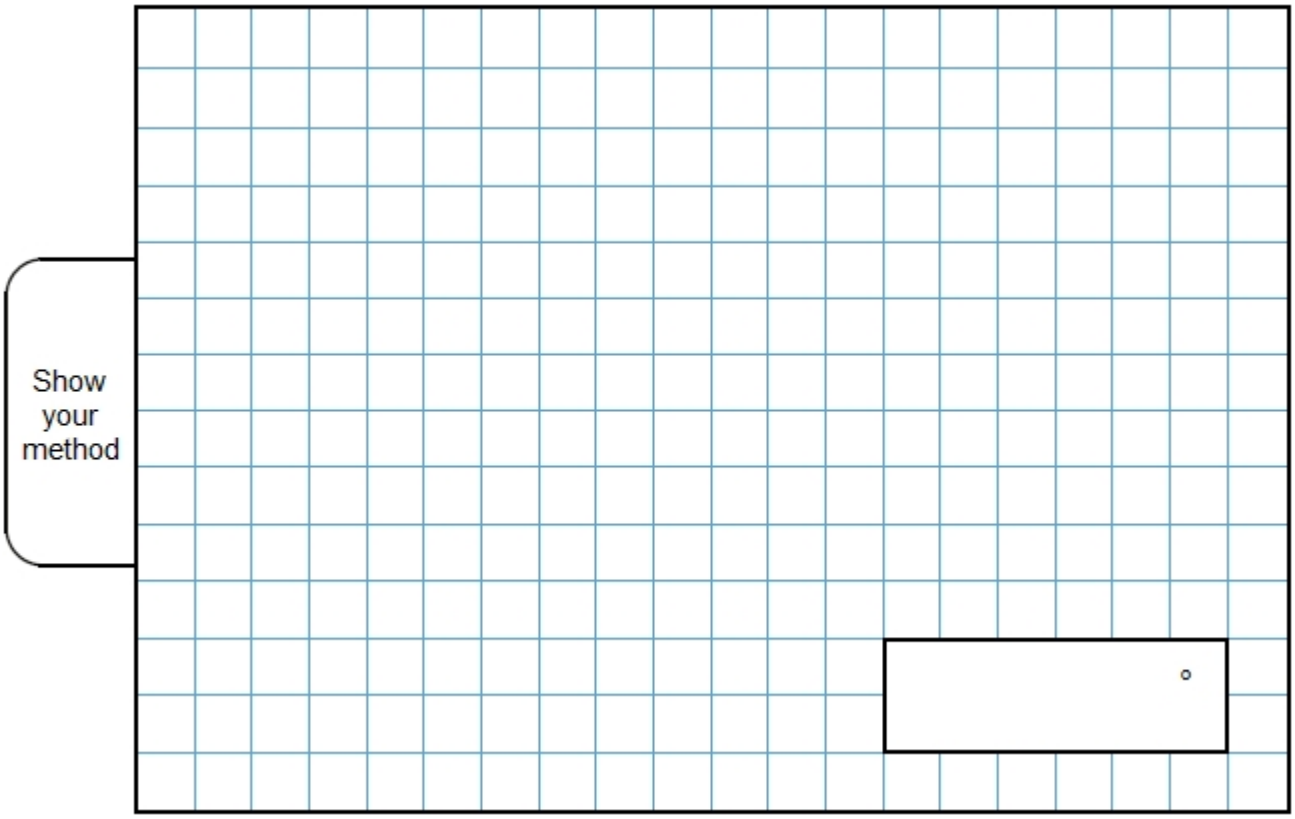


A quarter of the children chose chicken soup.

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

Alfie makes a pie chart to show this information.

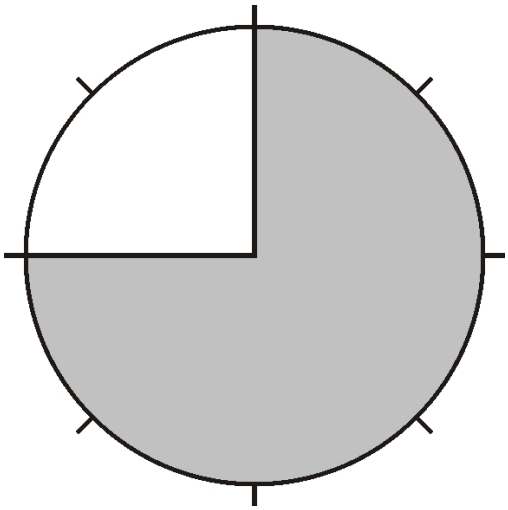
What **angle** should he use for the children who chose tomato soup?



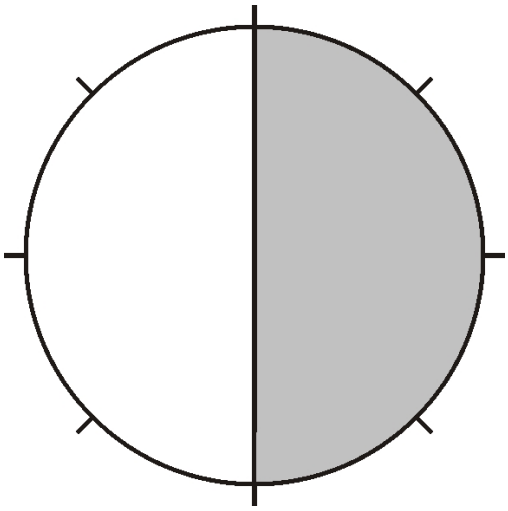
3 marks

29. Look at the information in these two pie charts.

Pupils in class 6K

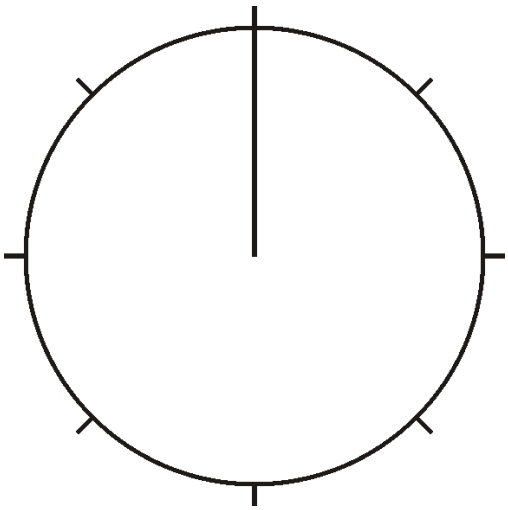


Girls in class 6K



Use the information in the two pie charts to complete the pie chart below.

Pupils in class 6K



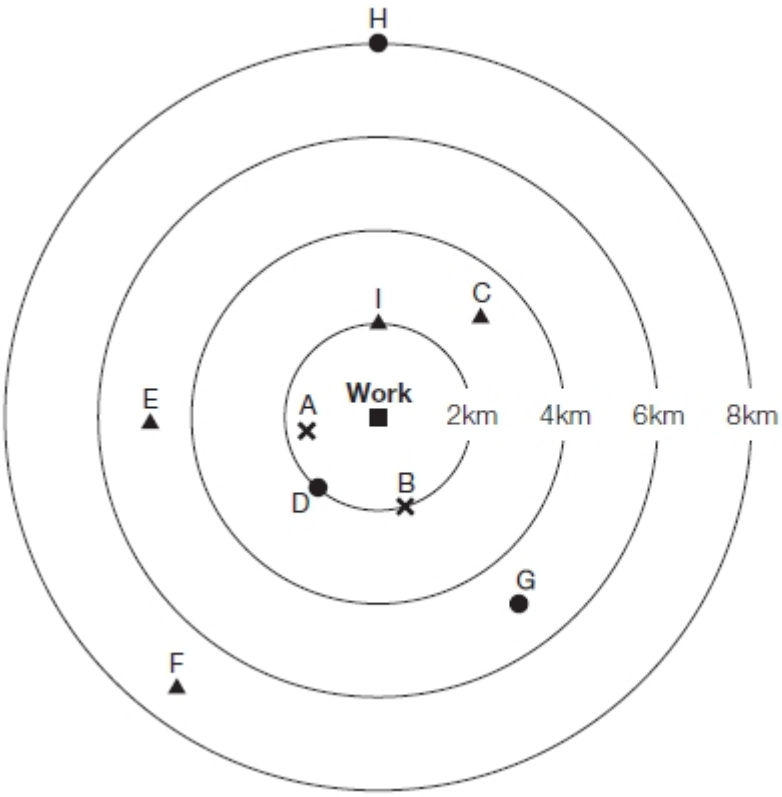
Key:

11 years old girls

All other pupils in the class

1 mark

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



Key:
- walk
- bus
- cycle

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

people

1 mark

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

km

1 mark

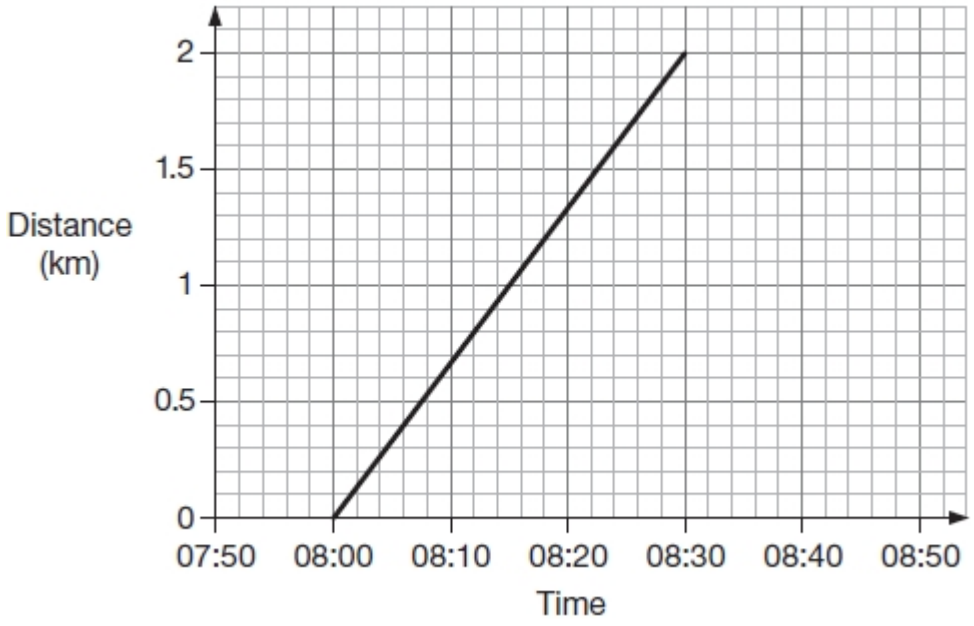
Write the letter of the person who lives 2 km from work and cycles.

1 mark

31. 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

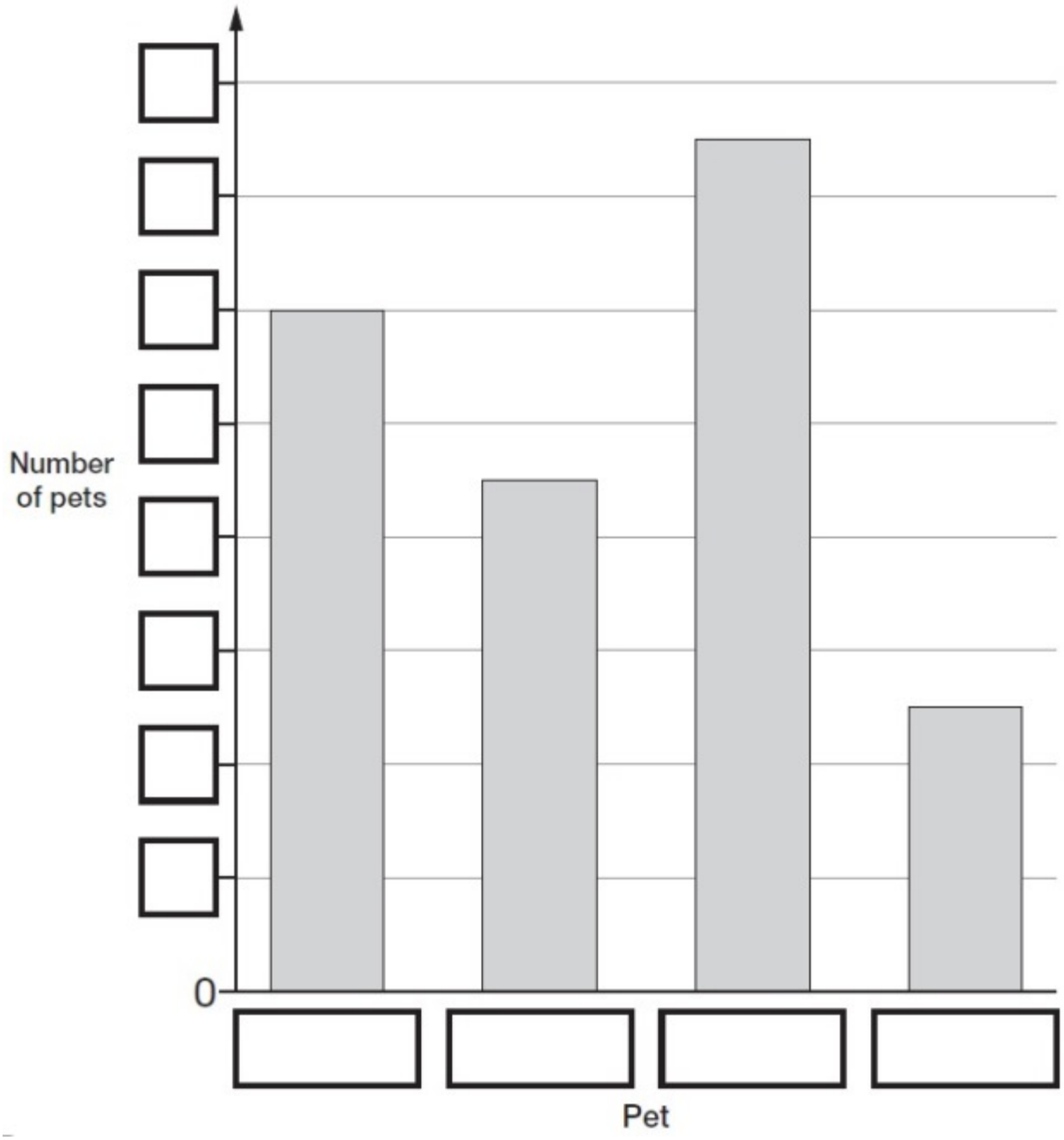
32. Alfie collected information about the pets owned by children in his class.

Here are his results.

Pet	Number of pets
dog	9
cat	12
rabbit	5
fish	15

This bar chart shows the information from the table.

Fill in **all** the missing labels.



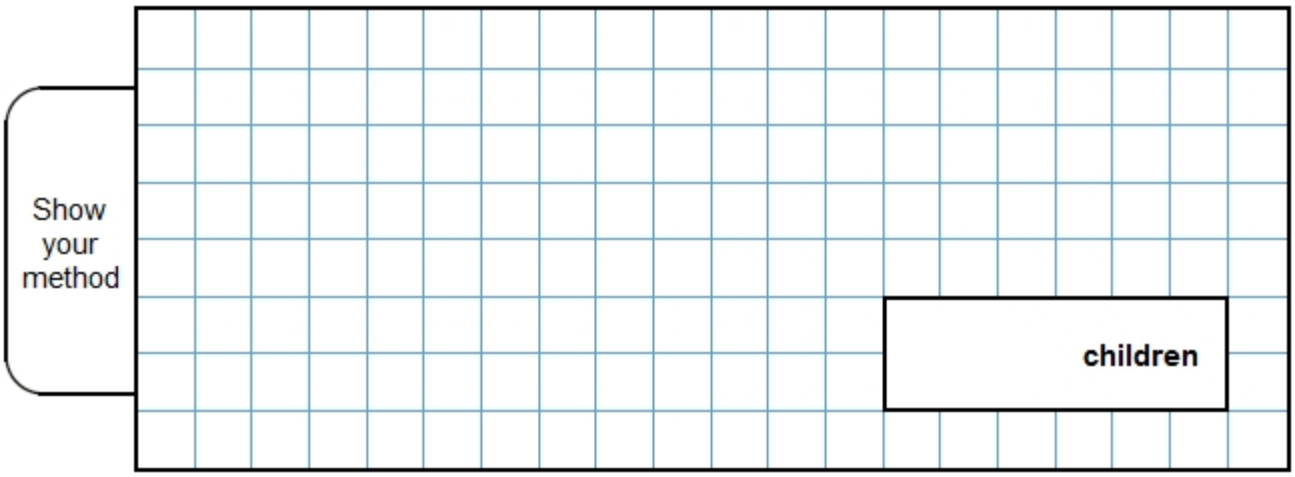
2 marks

33. 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.

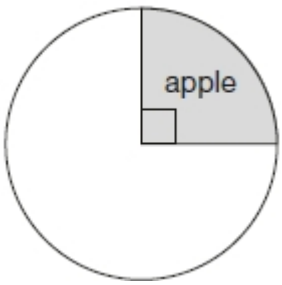
How many children took part in the survey?



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

34. Megan goes on a walking holiday for five days.

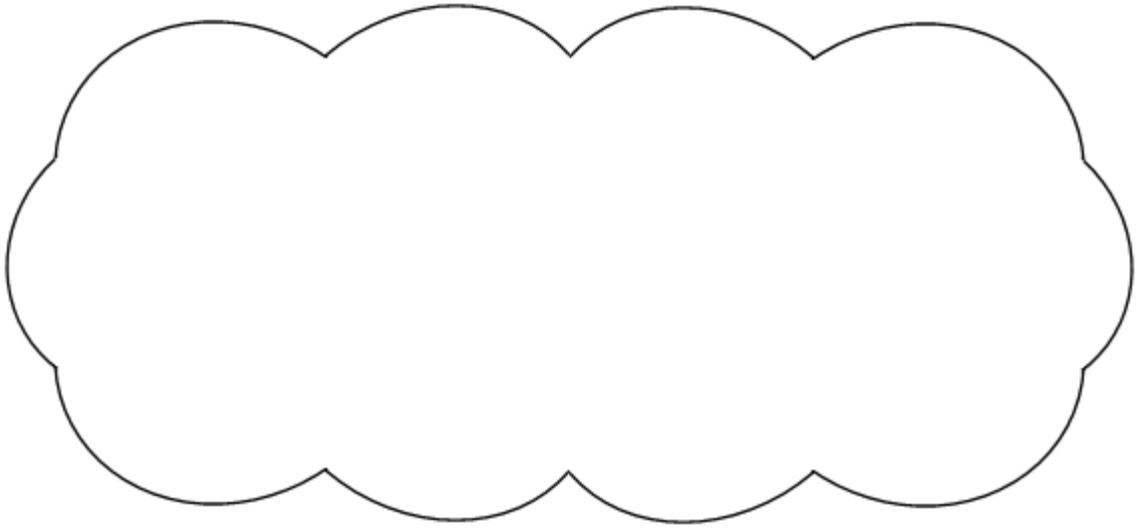
The table shows how far she walked on the first four days.

Monday	Tuesday	Wednesday	Thursday
14 km	23 km	13 km	13 km

Megan says,

'My average for the first four days is more than 15 km.'

Explain why Megan is **correct**.

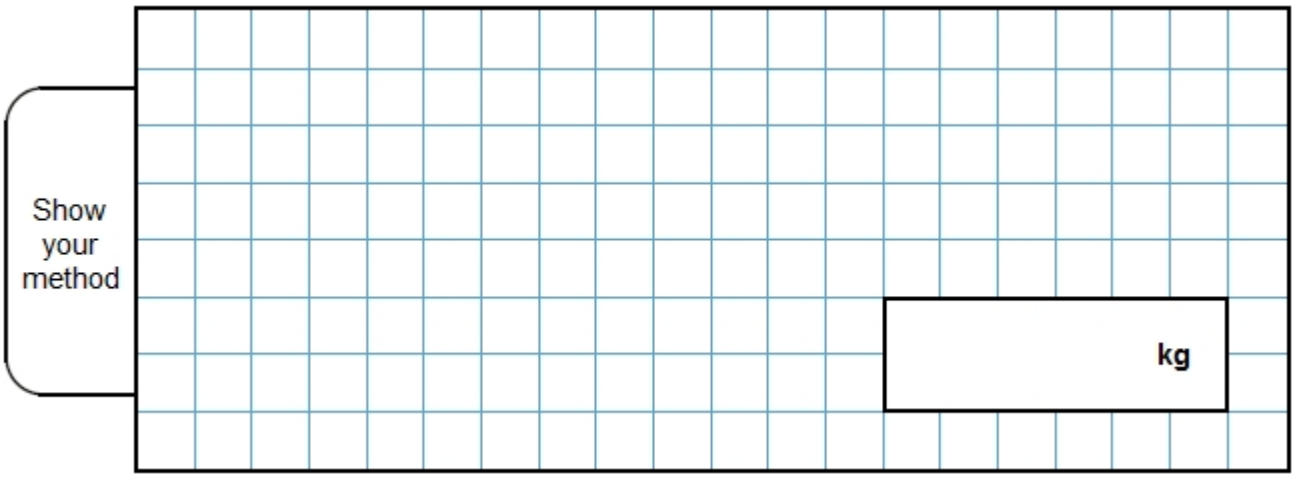


1 mark

Friday is her last day.

She wants to increase her average to **17 km**.

How many kilometres must she walk on Friday?

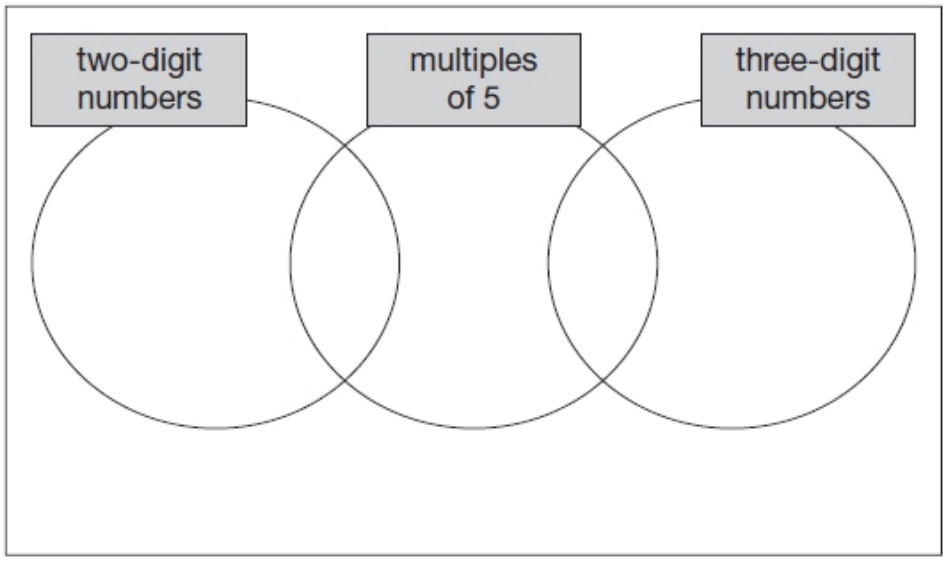


2 marks

35. Here is a diagram for sorting numbers.

Write **each** number in its correct place on the diagram.

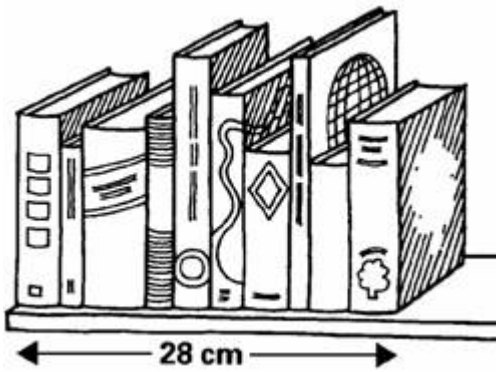
2 20 201 2000



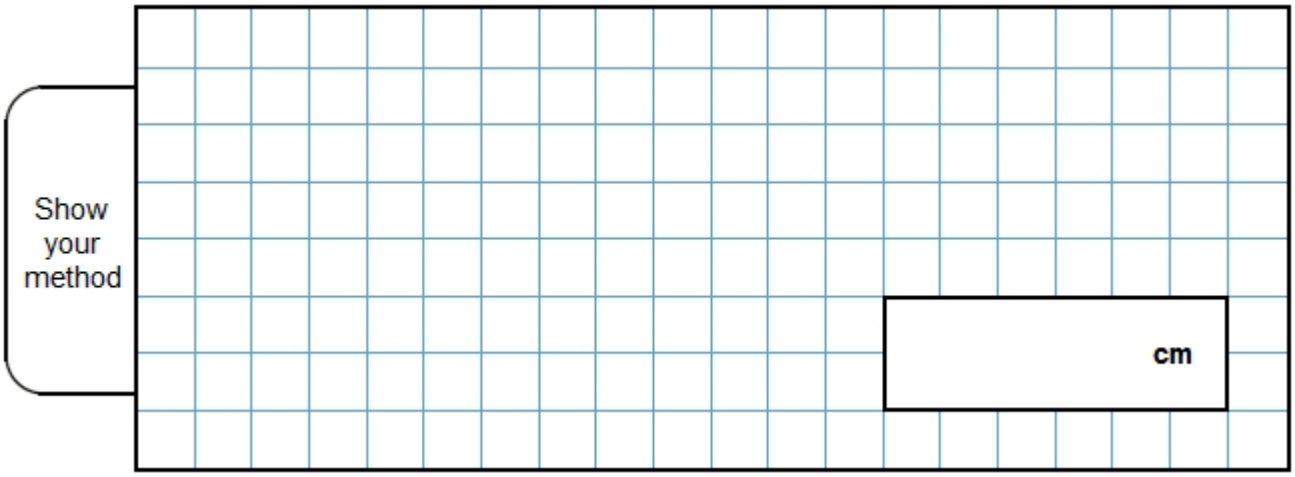
2 marks

36. Vicki puts 10 books on a shelf.

The **10 books** take up **28 centimetres**.



What is the **mean (average)** thickness of her books?

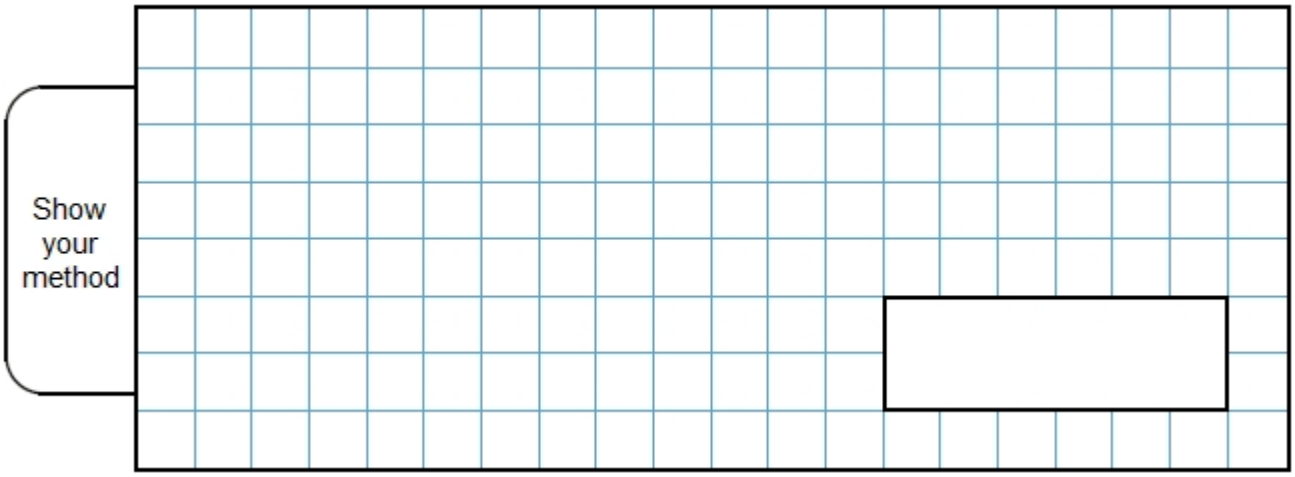


2 marks

The shelf is **120 centimetres** long.

Vicki fills the shelf with a mixture of books like the **first ten books.**

Estimate how many books she can get on the **120 cm shelf**.

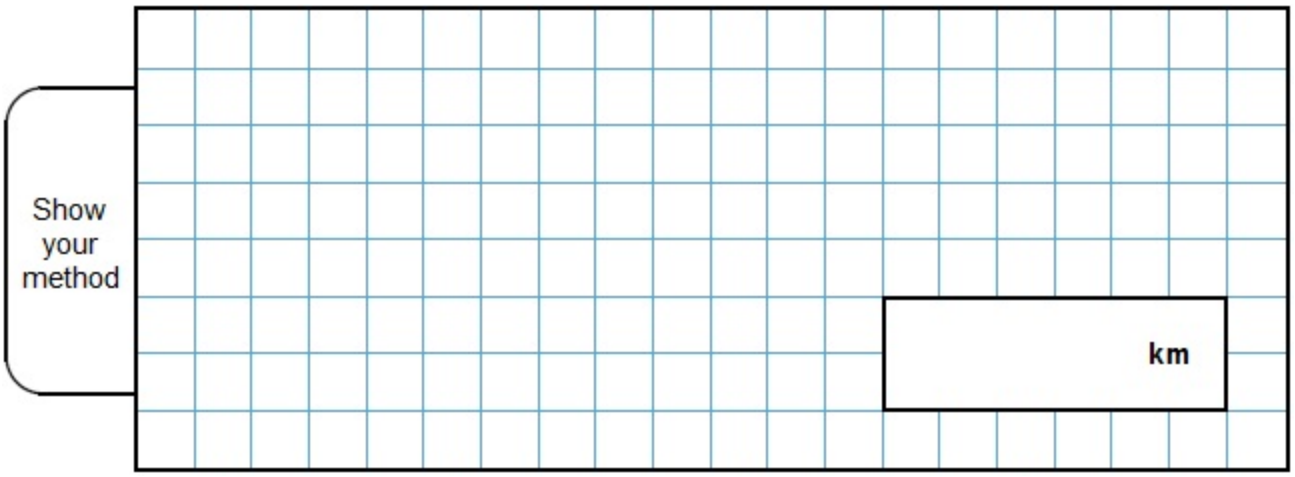


2 marks

37. This table shows the distance that five friends travel to school each day.

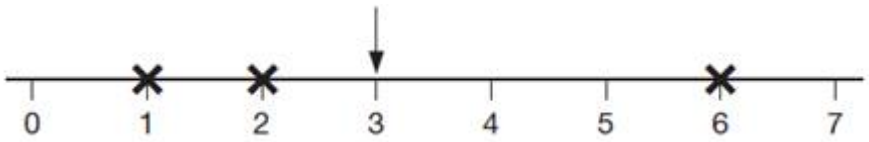
Name	Distance (km)
Amina	1.8
William	2.4
Layla	3.2
Chen	1.6
Dev	4.5

What is the **mean** distance they travel to school each day?

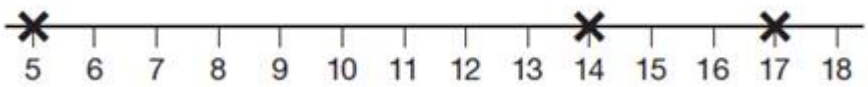


2 marks

38. The arrow below points to the **mean** of the three numbers shown by crosses.



(a) Draw an arrow that points to the mean of the three numbers shown below.

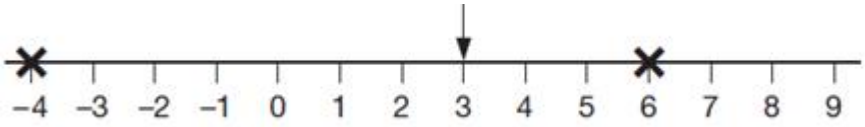


1 mark

(b) The arrow below points to the mean of three numbers.

One of the numbers is missing.

Draw a cross to show the position of the missing number.

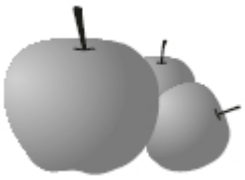


1 mark

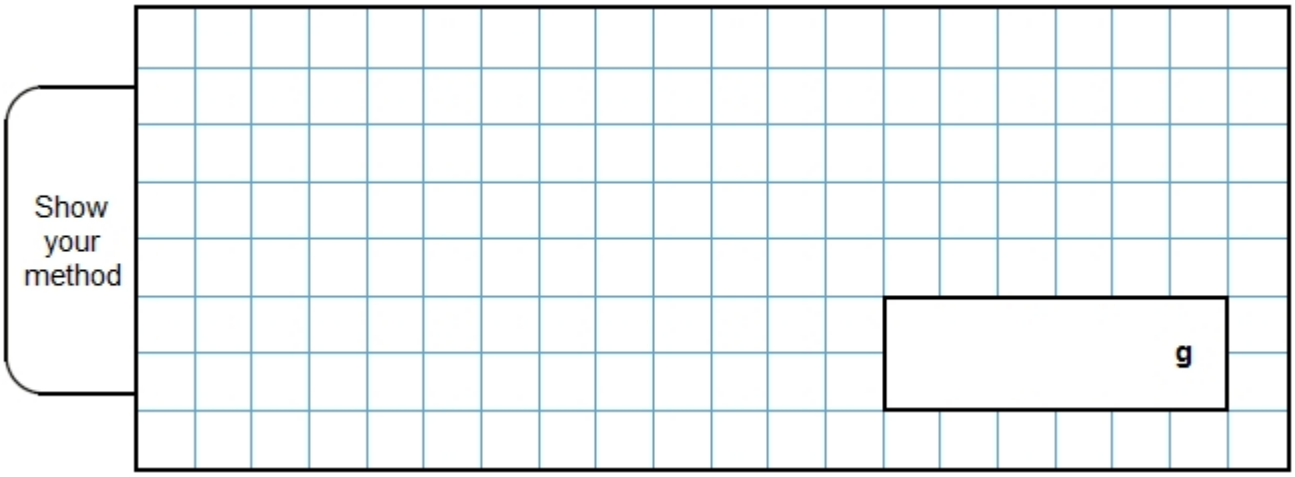
39. Three apples have a **mean** (average) mass of 100 grams.

The largest apple is removed.

The **mean** mass of the remaining two apples is 70 grams.



What is the mass of the largest apple?

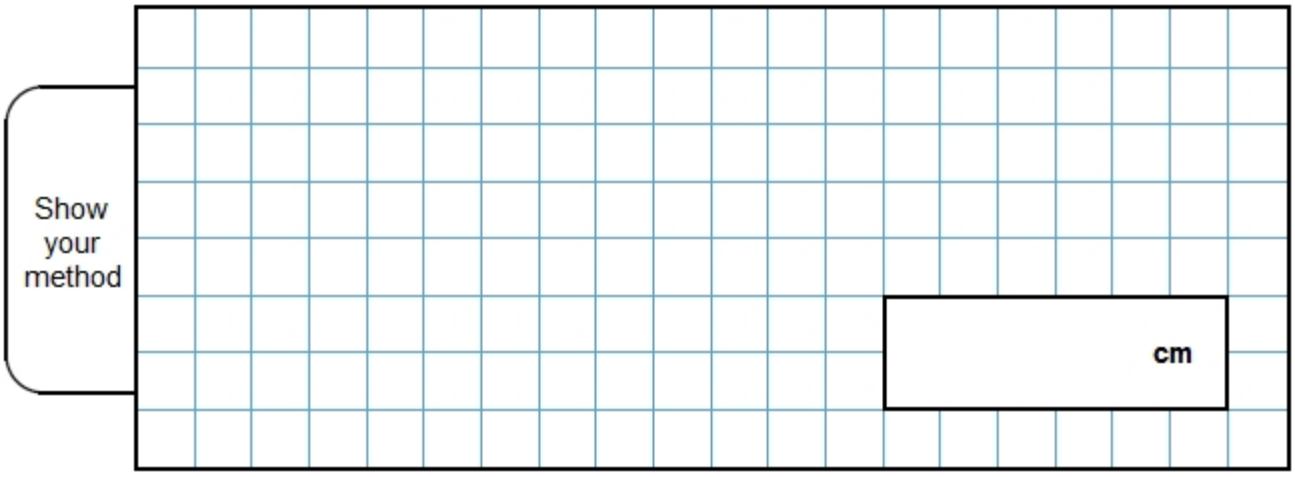


2 marks

40. Seven children measured their heights.

Children	Height (cm)
Stefan	144
Lara	136
Olivia	142
Chen	143
Maria	152
Dev	148
Sarah	150

What is the mean height of the children?



2 marks

41. Last year, Jacob went to four concerts.

Three of his tickets cost £5 each.

The other ticket cost £7

What was the **mean** cost of the tickets?

Show your method

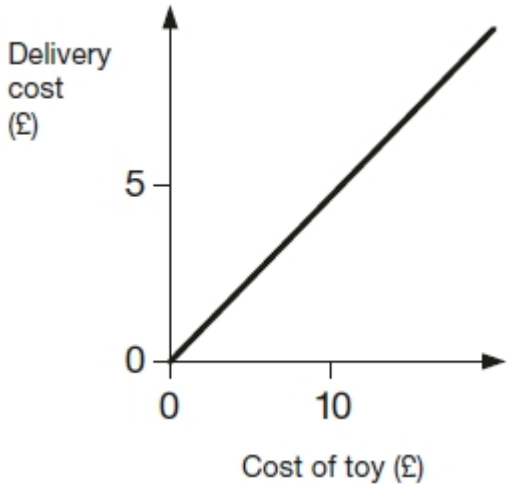
£

2 marks

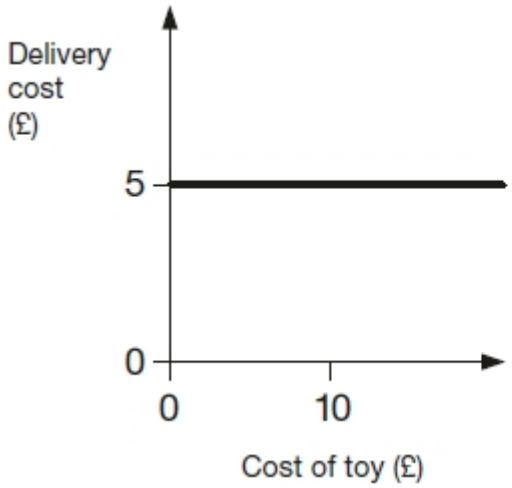
42. Two companies sell toys online. They charge to deliver.

Describe the delivery cost of the second company.

The first company is done for you.



The more a toy costs, the more the delivery costs.



1 mark

43. This weather chart shows the highest and lowest temperatures in a town on five days in March.

	Temperature °C	
	highest	lowest
Monday	+7	0
Tuesday	+7	–2
Wednesday	+8	–2
Thursday	+9	+1
Friday	+4	–5

Which day has the greatest difference between the highest and the lowest temperatures?

_____

1 mark

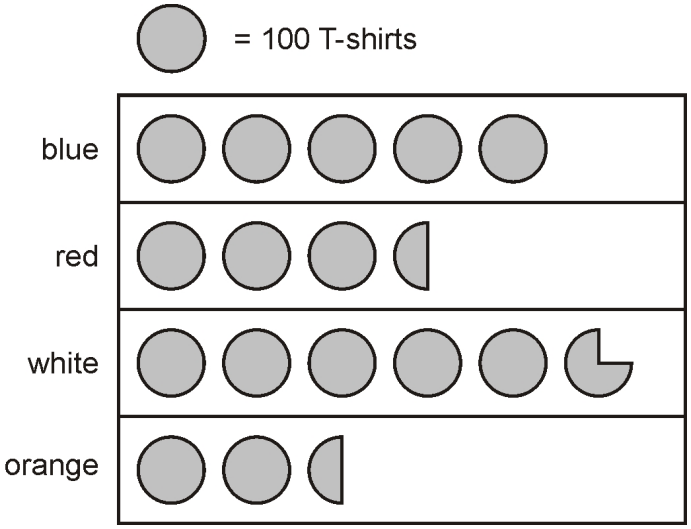
What is the difference between the lowest temperatures on Thursday and Friday?

degrees

1 mark

44. A shop sells T-shirts.

This chart shows how many T-shirts were sold in a month.



Write the colours of the T-shirts that sold **more than 400** in the month.

_____

1 mark

How many red T-shirts and orange T-shirts were sold **altogether**?

1 mark

How many **more** white than blue T-shirts were sold?

1 mark

45. This table shows the number of children and adults at a childcare centre.

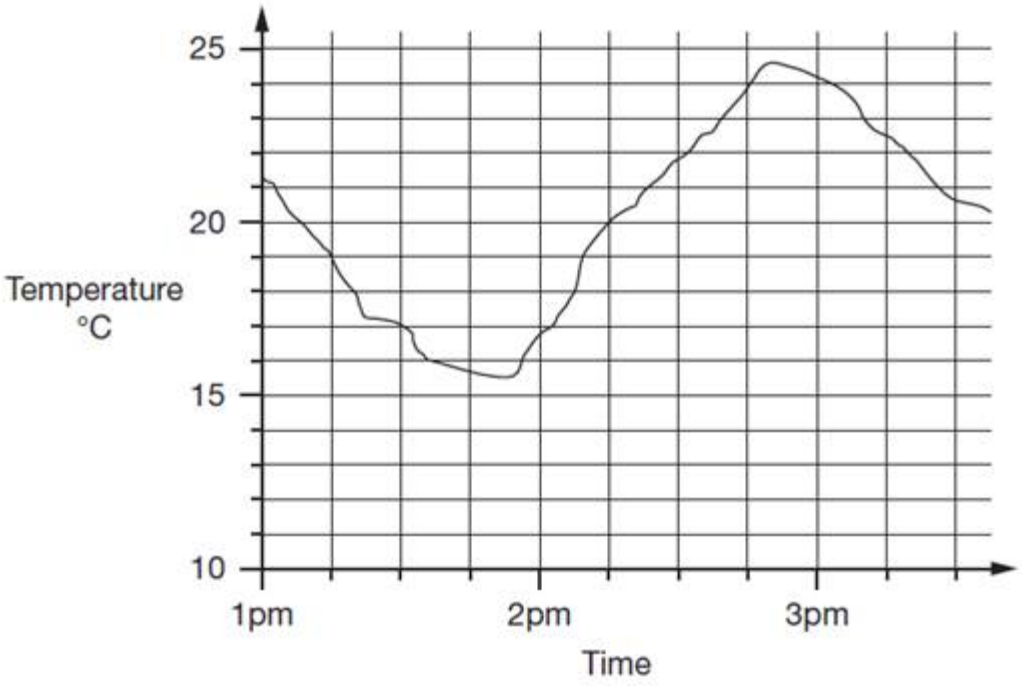
Complete the table to make it correct.

The first row has been done for you.

Age in years	Number of children	Number of adults	Number of children per adult
1 and under	12	4	3
2 or 3	20		4
4 or 5		3	8

1 mark

46. This graph shows how the temperature changed in Liam's room one afternoon.



Estimate the temperature at 3:15pm.

°C

1 mark

Estimate the time when the temperature was highest.

pm

1 mark

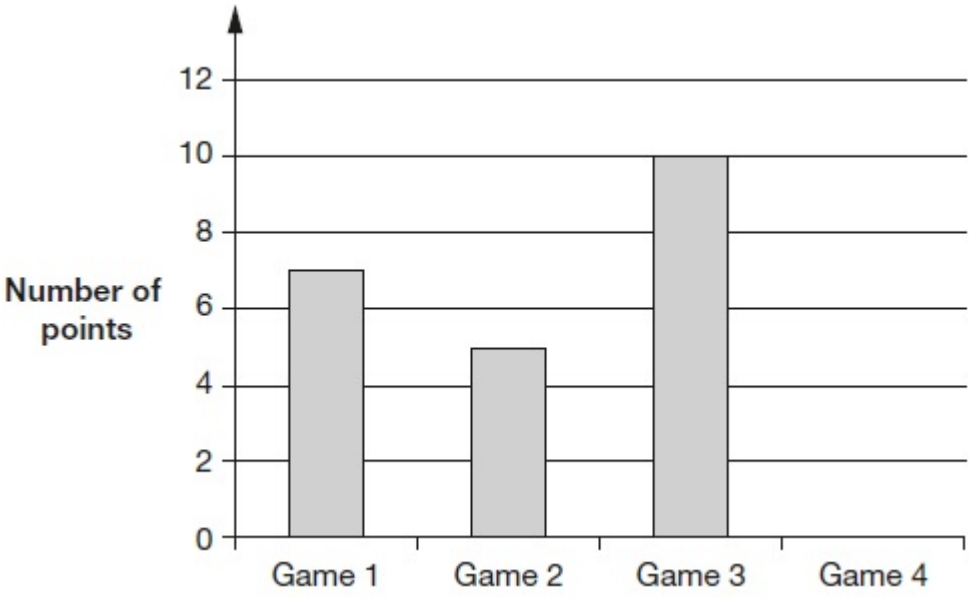
How much did the temperature change from 2pm to 2:30pm? Give your answer to the **nearest degree**.

degrees

1 mark

47. Layla plays basketball.

This graph shows how many points she scored in her first 3 games.



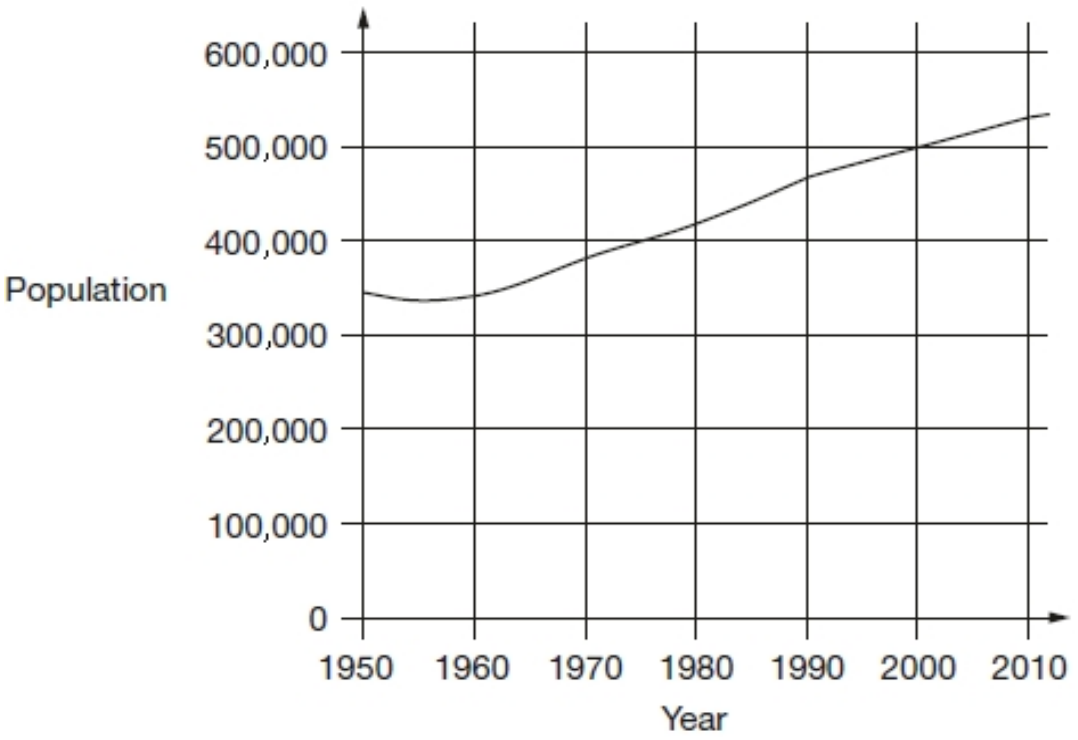
After 4 games, Layla had scored a total of 25 points.

Complete the graph.

Use a ruler.

1 mark

48. 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

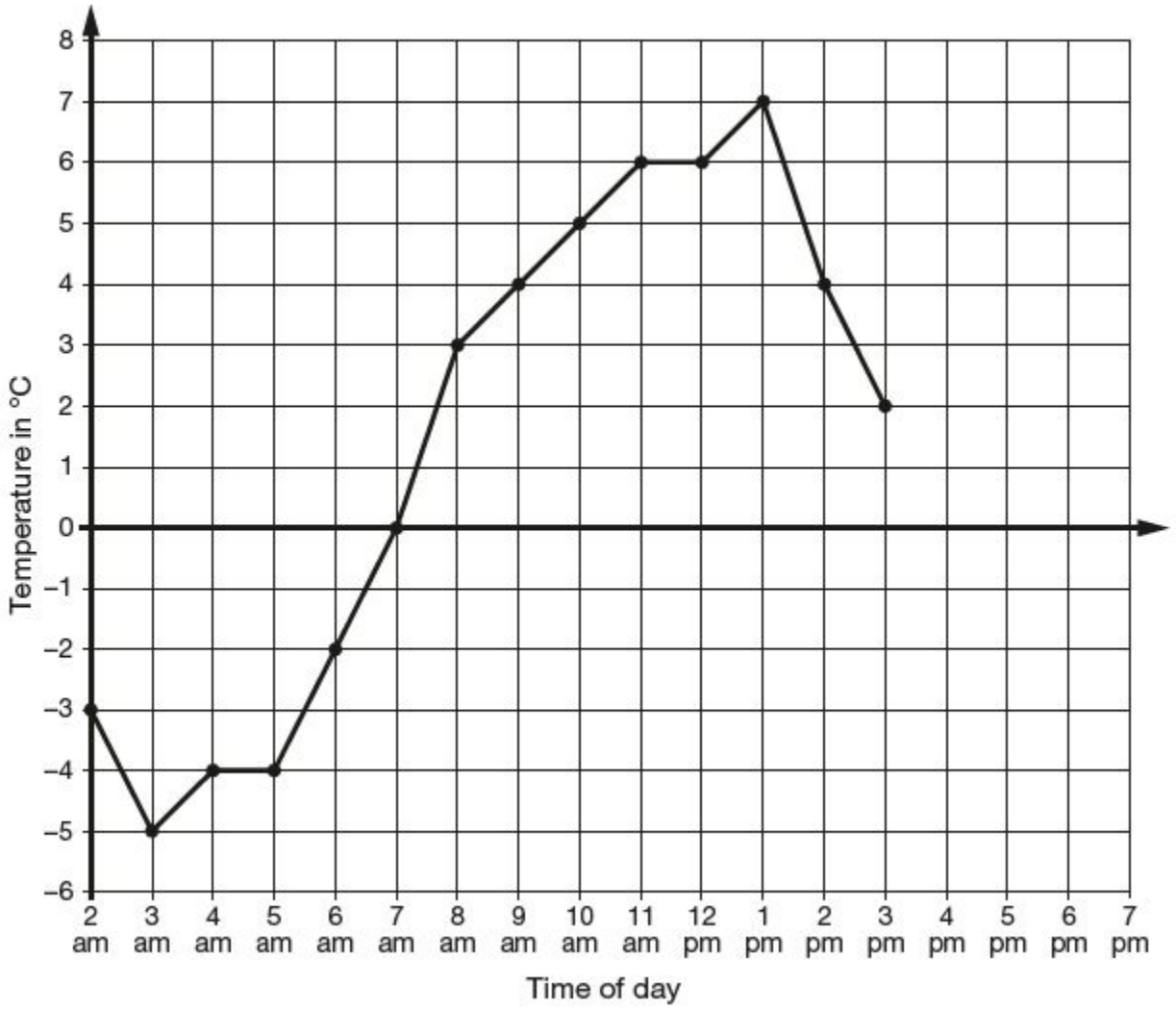
How much did the population increase from 1950 to 2000?

1 mark

What was the population of Cornwall in 2010?

1 mark

49. This graph shows the temperature in °C from 2 am to 3 pm on a cold day.



How many degrees **warmer** was it at 3 pm than at 3 am?

°C

1 mark

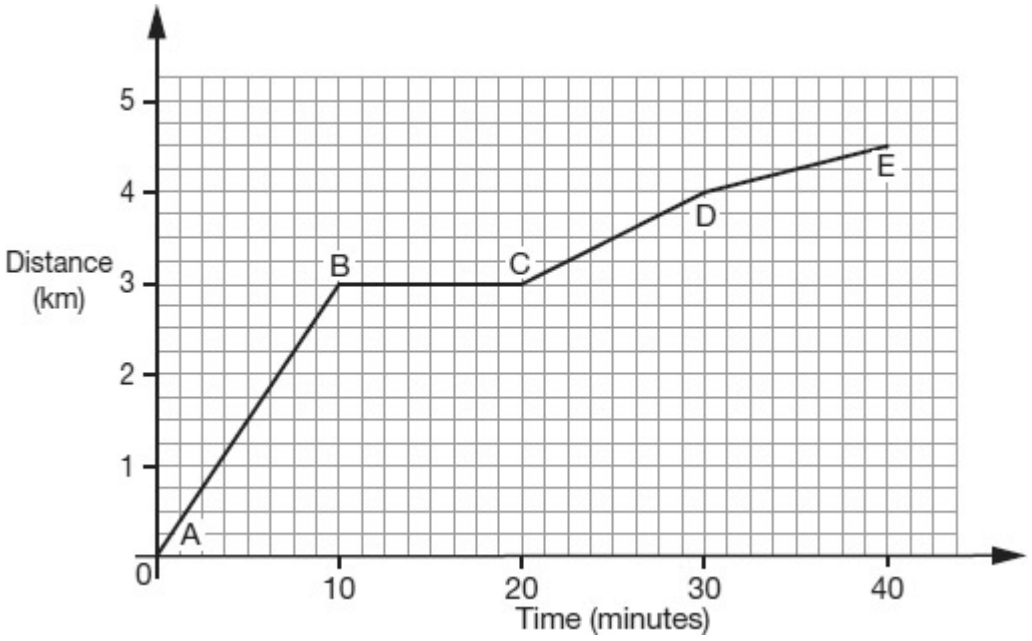
At 6 pm the temperature was 4 degrees lower than at 3 pm.

What was the temperature at 6 pm?

°C

1 mark

50. Look at the graph below that shows Dev's bike ride.



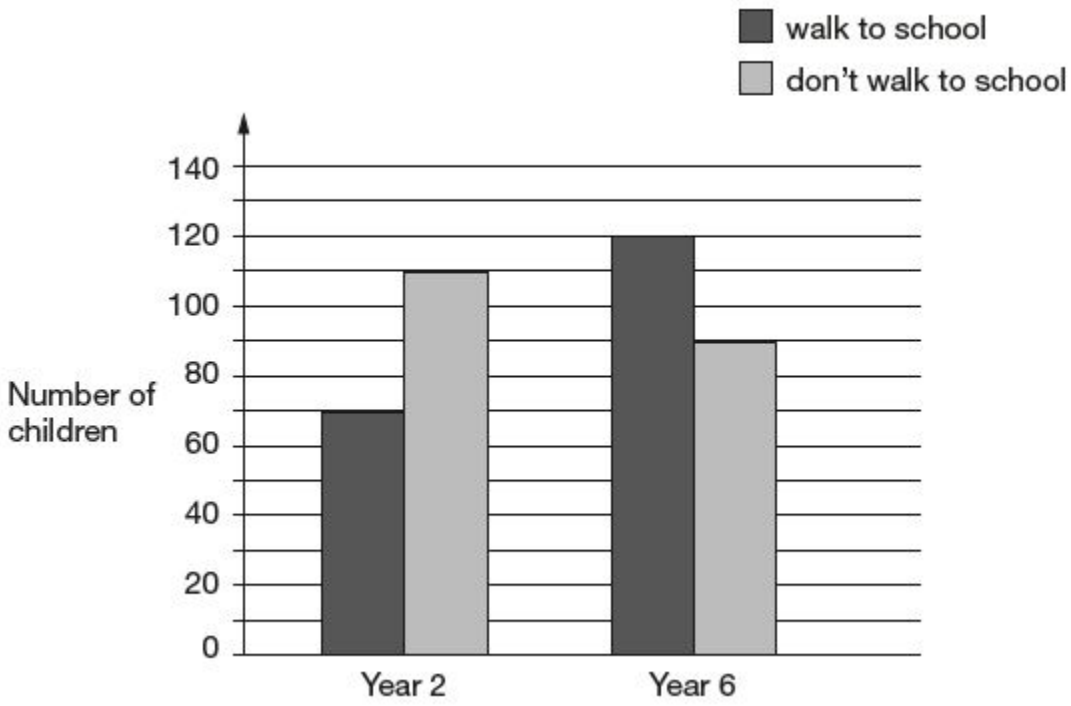
Match each part of Dev's journey to the correct sentence.

A to B	Dev rests for 10 minutes.
B to C	Dev cycles 1 km in 10 minutes.
C to D	Dev cycles 3 km in 10 minutes.
D to E	Dev cycles less than 1km in 10 minutes.

1 mark

51. William asks the children in Year 2 and Year 6 if they walk to school.

This graph shows the results.



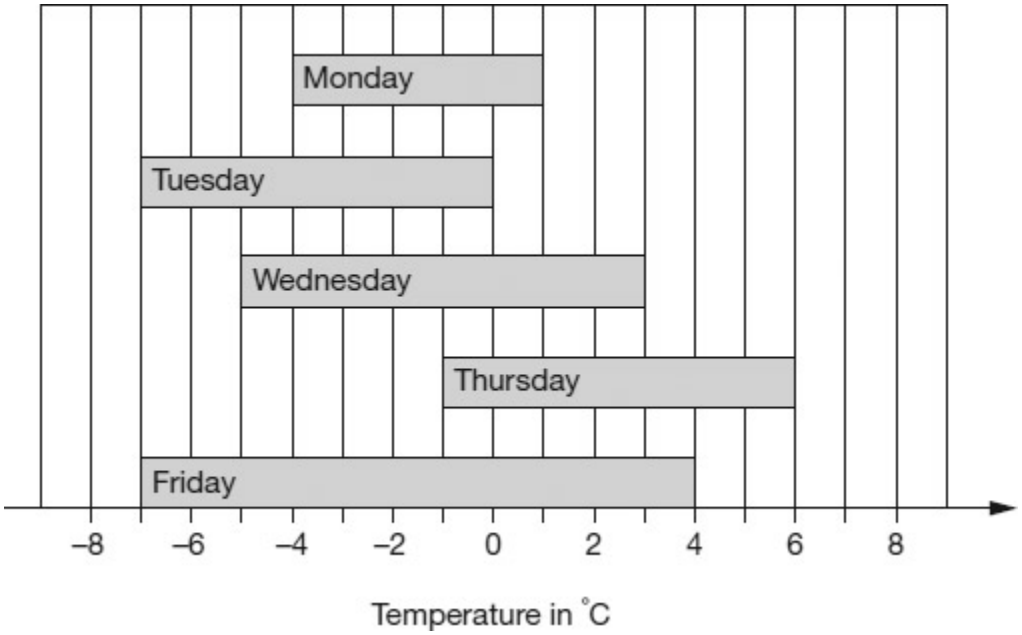
Altogether, how many children **don't** walk to school?

1 mark

How many **more** Year 6 children than Year 2 children walk to school?

1 mark

52. This chart shows the range of temperatures each day during one week from Monday to Friday.



What was the **lowest** temperature?

°C

1 mark

What was the difference between the highest and lowest temperatures on **Wednesday**?

°C

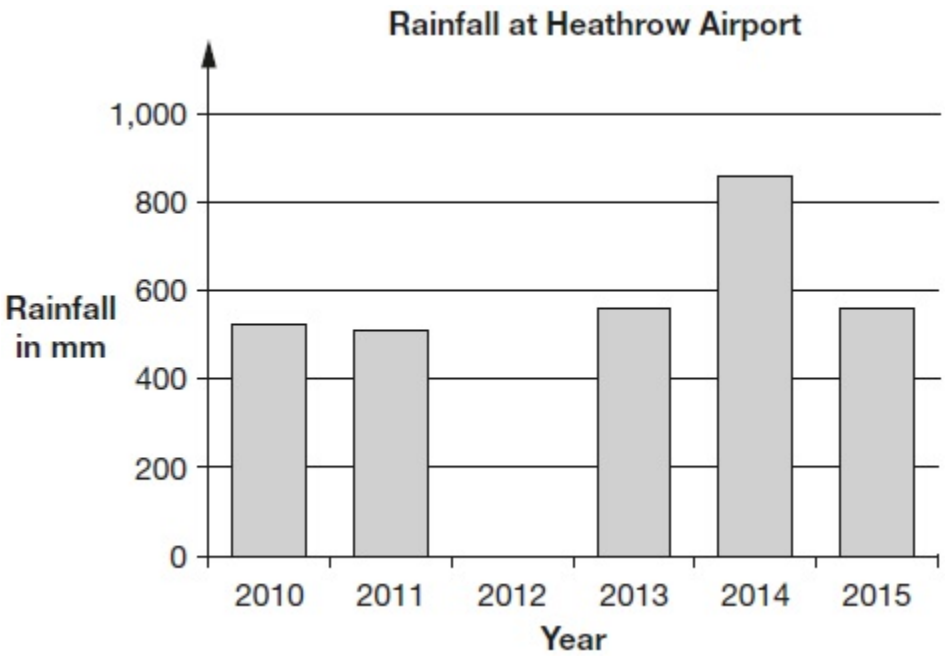
1 mark

53. This table shows the total rainfall and sunshine each year at Heathrow Airport from 2010 to 2015.

Year	Rainfall in mm	Sunshine in hours
2010	521	1,371
2011	509	1,540
2012	700	1,503
2013	560	1,452
2014	864	1,669
2015	562	1,508

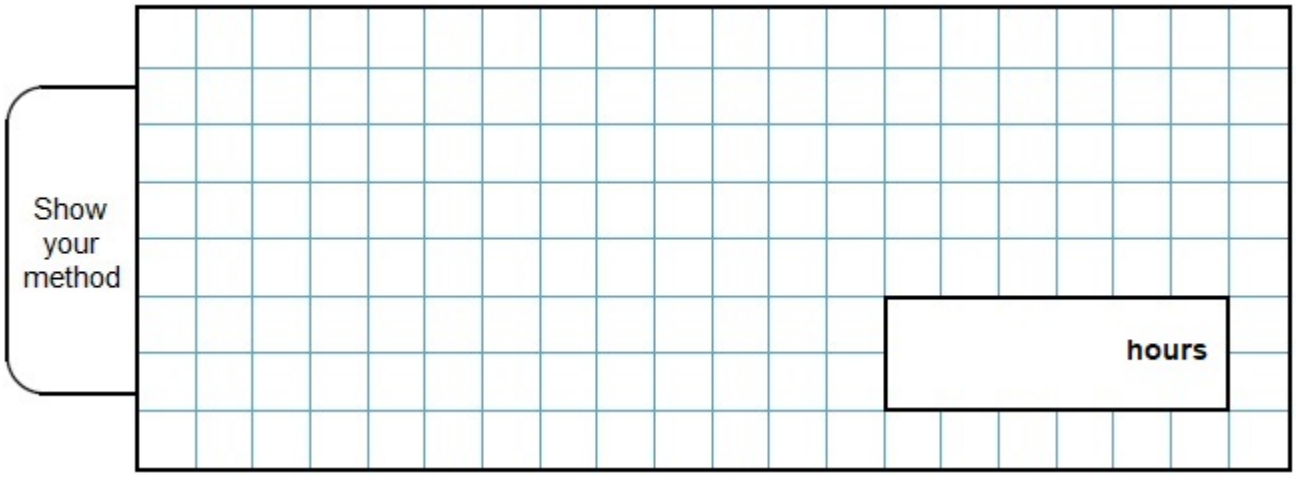
Use this table to complete the graph.

Use a ruler.



1 mark

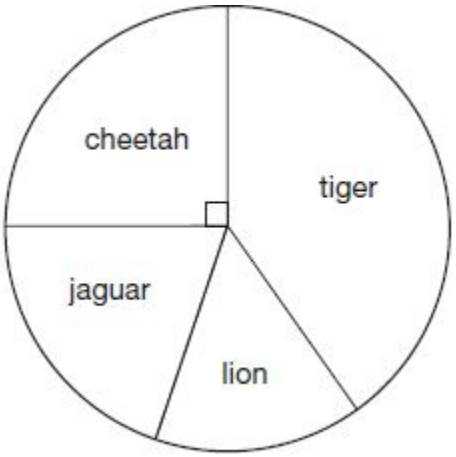
Use the table to calculate the **mean** hours of sunshine for Heathrow Airport from **2013** to **2015**.



2 marks

54. This chart shows the number of different types of big cat in a zoo.

There are **20** big cats in the zoo altogether.



Here are some statements about the chart.

Tick the statements that are **true**.

There are more cheetahs than jaguars. ☐

The total number of lions and tigers is 10 ☐

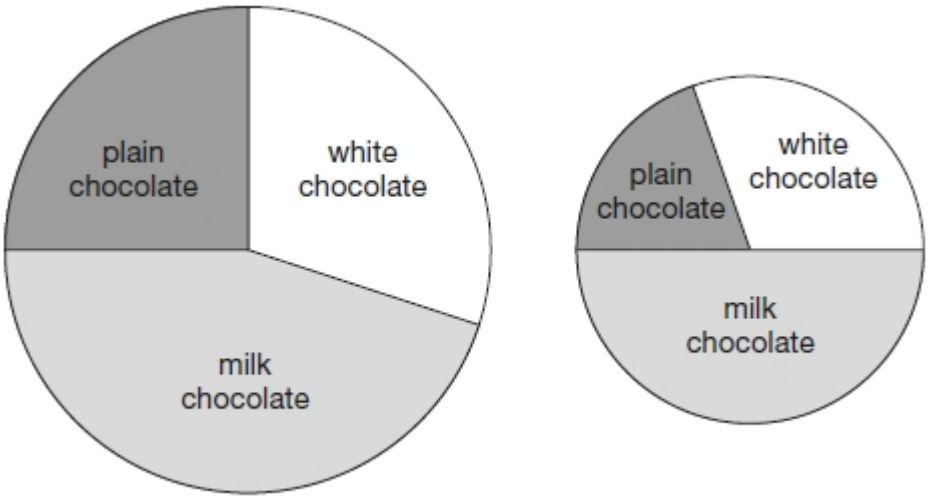
One-quarter of the big cats are cheetahs. ☐

There are more than 5 jaguars. ☐

2 marks

55. 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.

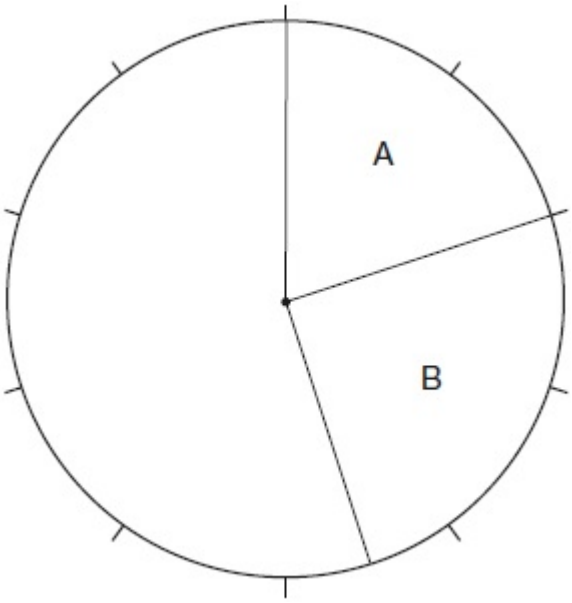
1 mark

56. Look at the data in this table.

Label	Percentage
A	20%
B	25%
C	15%
D	30%
E	10%

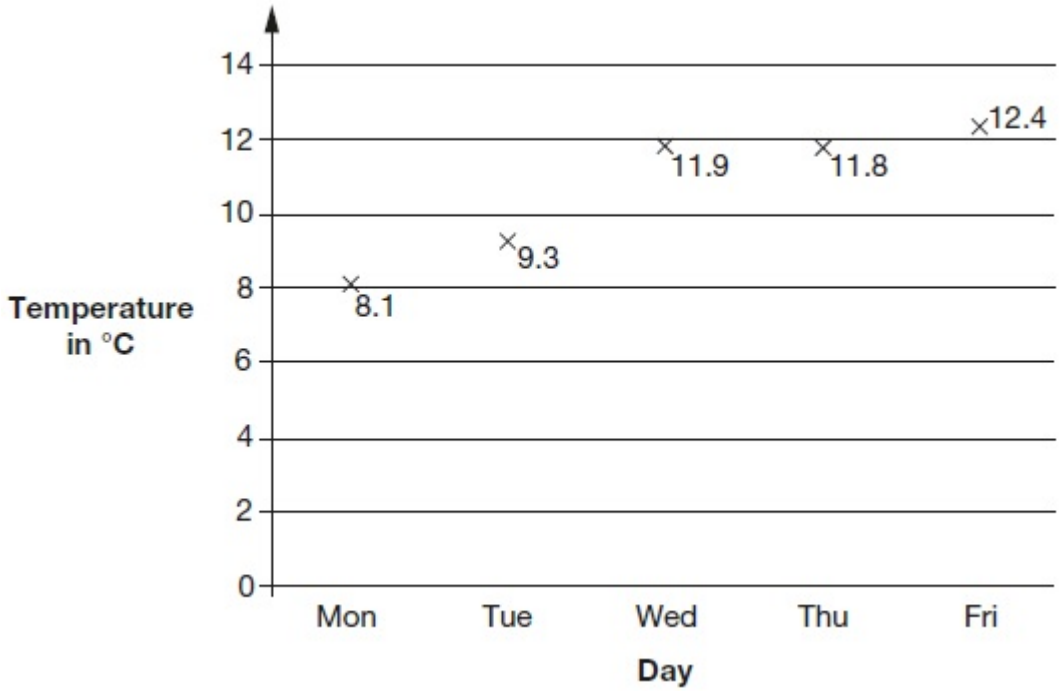
Using this data, draw **two** lines and write **three** labels to complete the pie chart.

Use a ruler.



2 marks

57. This graph shows the maximum temperature for five days.



For what fraction of the five days was the maximum temperature below 10°C?

1 mark

What was the **mean** maximum temperature, to one decimal place?

Show your method

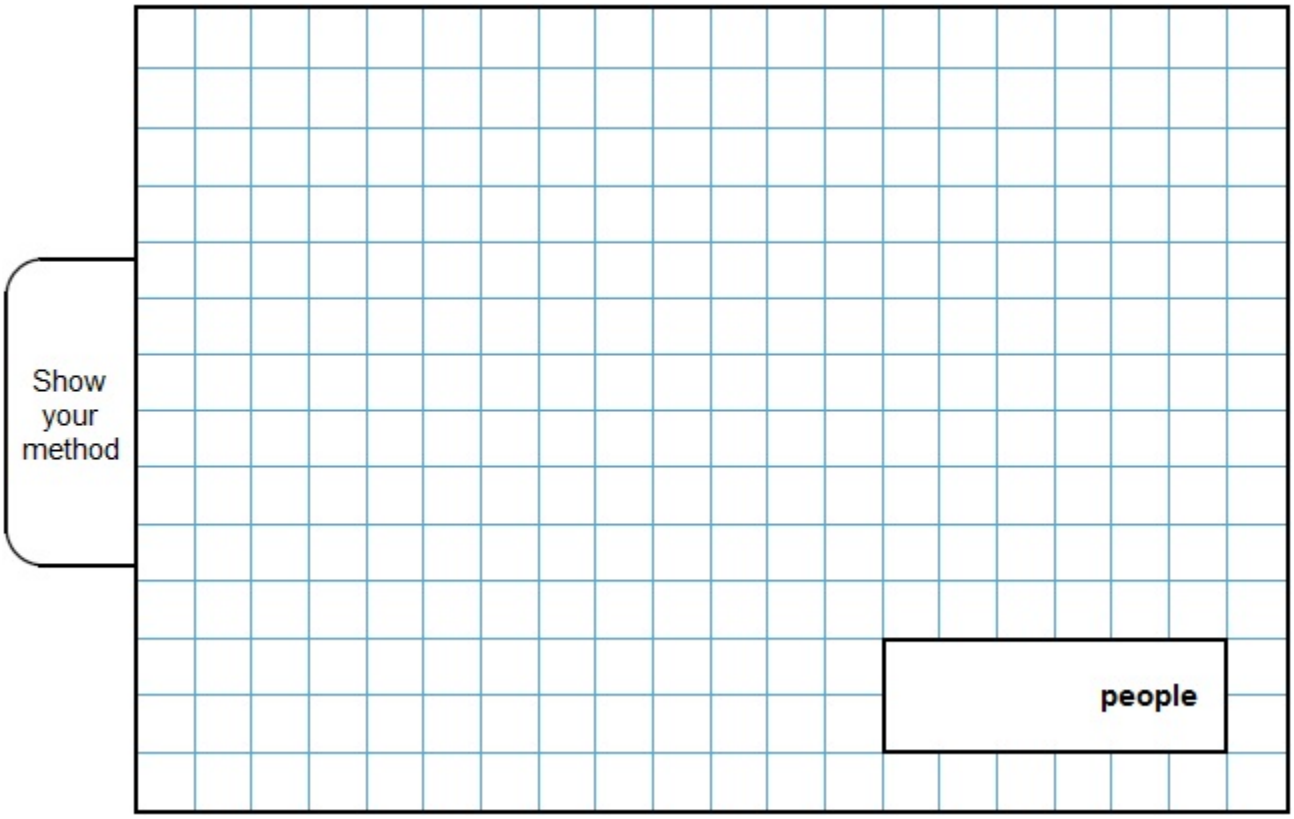
°C

2 marks

58. This table shows how many people finished the New York Marathon in each of the first four decades it was held.

New York Marathon	
Decade	**Total number of people who finished**
1st decade	24,863
2nd decade	170,932
3rd decade	282,420
4th decade	350,824

What is the mean number of people who finished the marathon per decade? Round your answer to the **nearest hundred**.



3 marks

59. Chris did a survey of the number of people who went into shops in one hour.

Number of people who went into a shop 𝍸 stands for 5 people	
Shoe shop	𝍸 𝍸 ||
Newsagent	||||
Post Office	𝍸 𝍸 𝍸 𝍸 ||
Bread shop	𝍸 𝍸 |||
Supermarket	𝍸 𝍸 𝍸 ||

How many people went into the **Supermarket** in the hour?

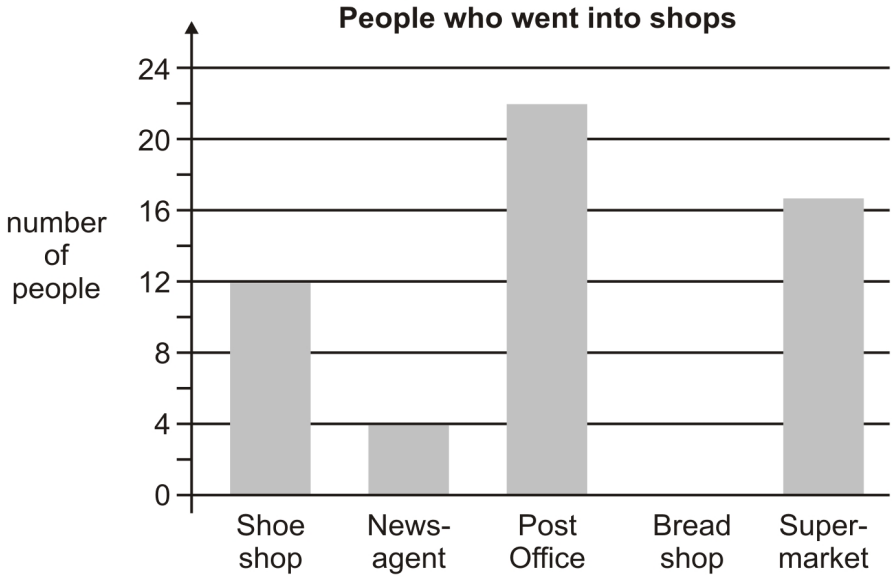
1 mark

How many **more** people went into the **Post Office** than the **Shoe shop**?

1 mark

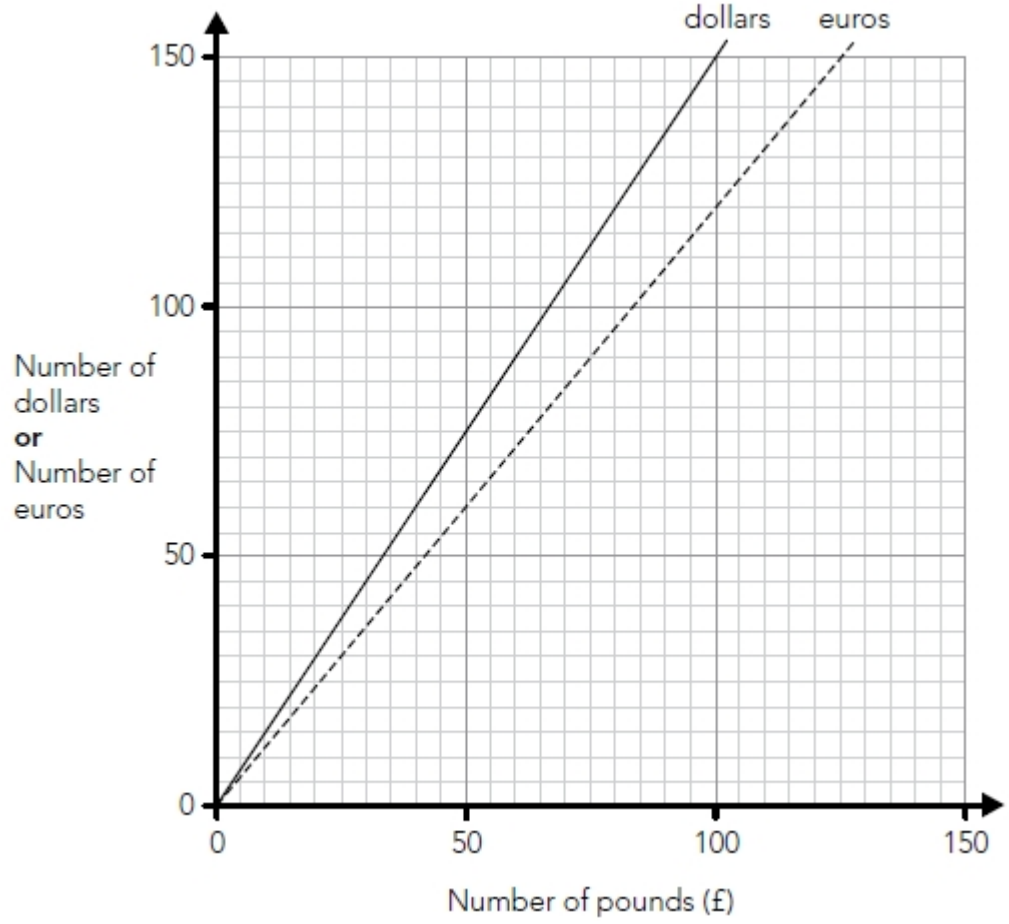
Here is part of a bar chart of the information.

Draw in the **missing** bar.



1 mark

60. 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