

# LINE GRAPHS

CONTENT REFERENCES:

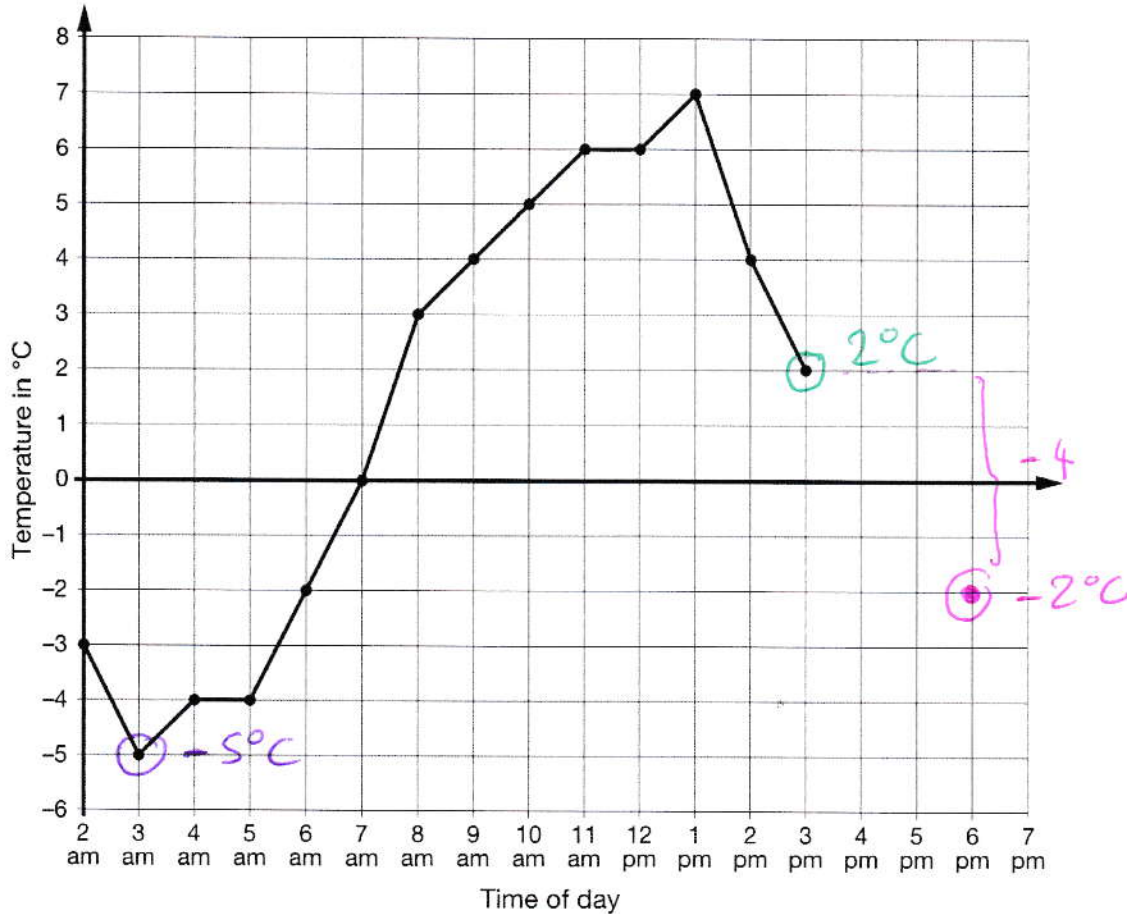
4S1, 5S2, 6S1

# KS2 SATS

PAST QUESTIONS BY TOPIC

1

This graph shows the temperature in  $^{\circ}\text{C}$  from 2 am to 3 pm on a cold day.



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

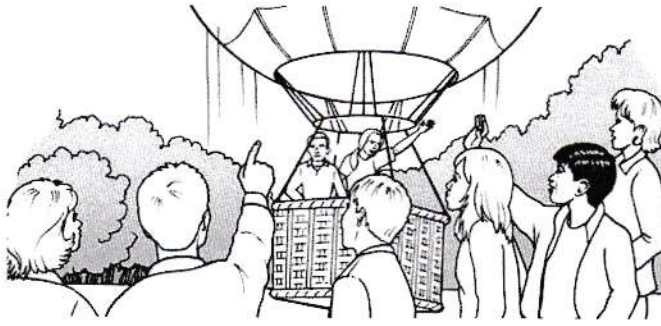
7  $^{\circ}\text{C}$

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

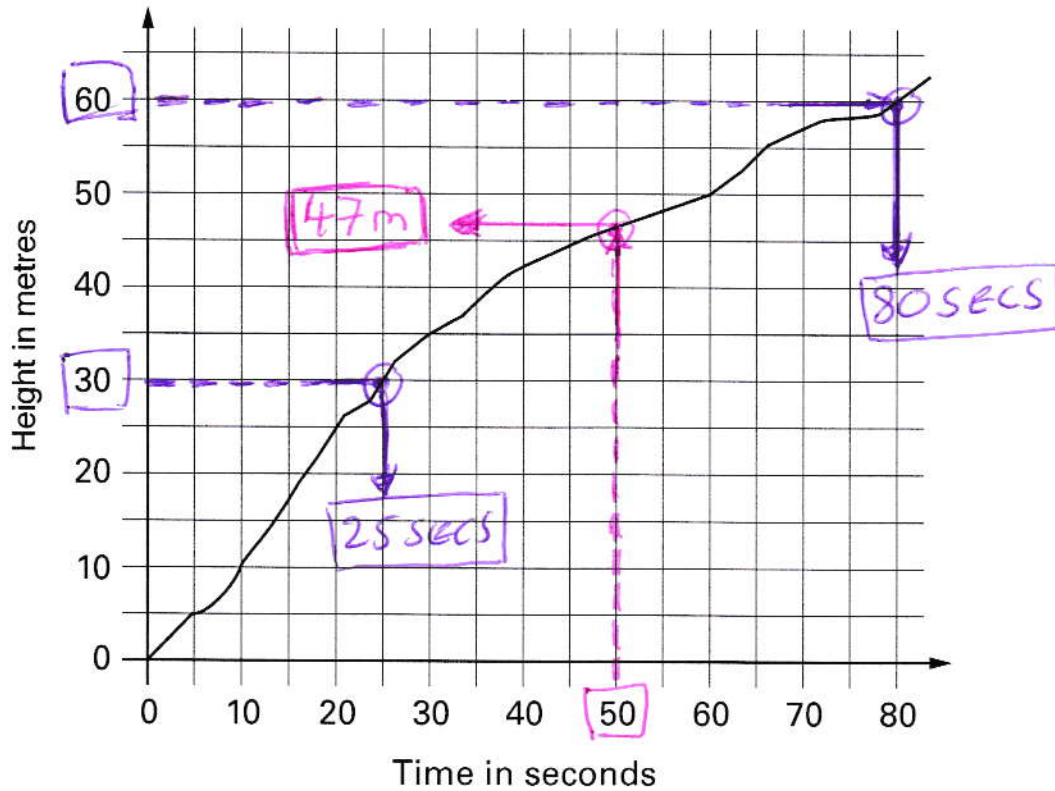
What was the temperature at 6 pm?

-2  $^{\circ}\text{C}$


[2 marks]



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




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

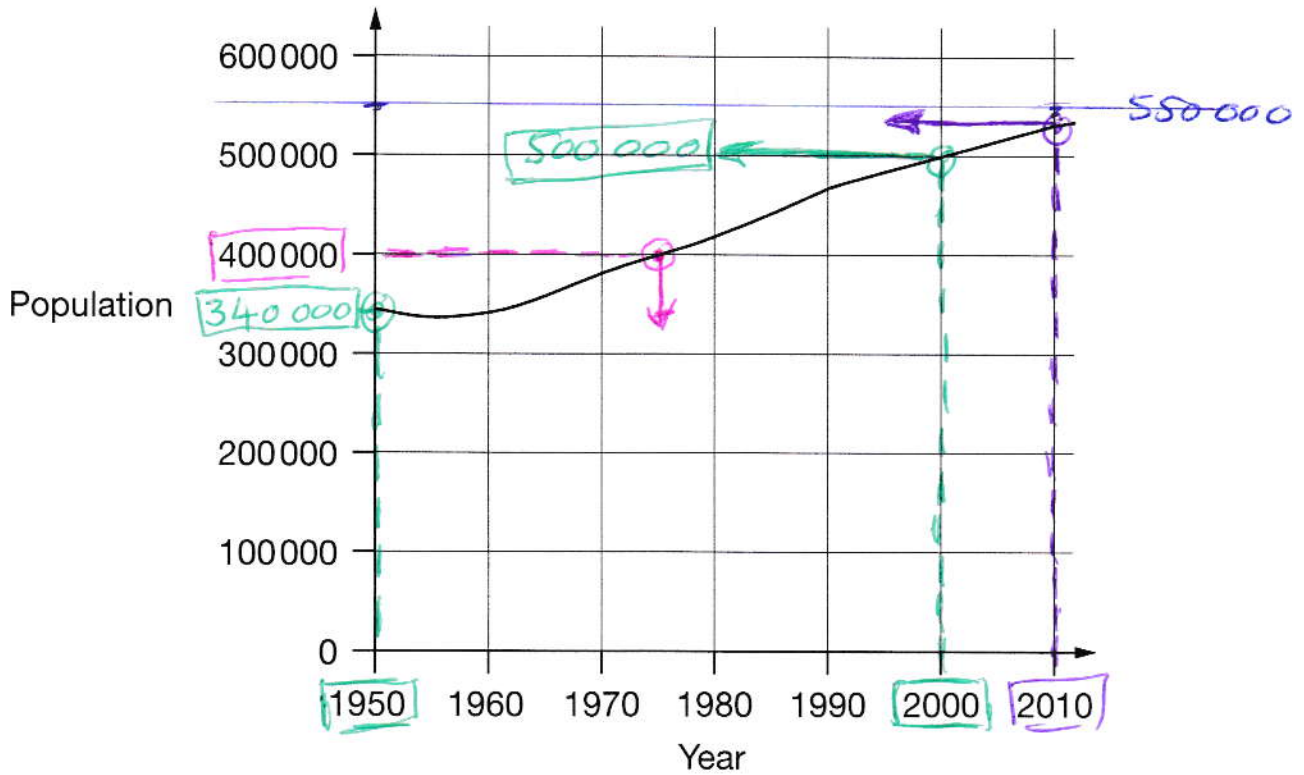
 47 m

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

$$80 - 25 = \underline{\underline{55}}$$

 55 seconds

3 | 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?

BETWEEN START OF 1970  
AND END OF 1970!

✍ 1970

How much did the population increase from 1950 to 2000?

$500\,000 - 340\,000$

✍ 160\,000

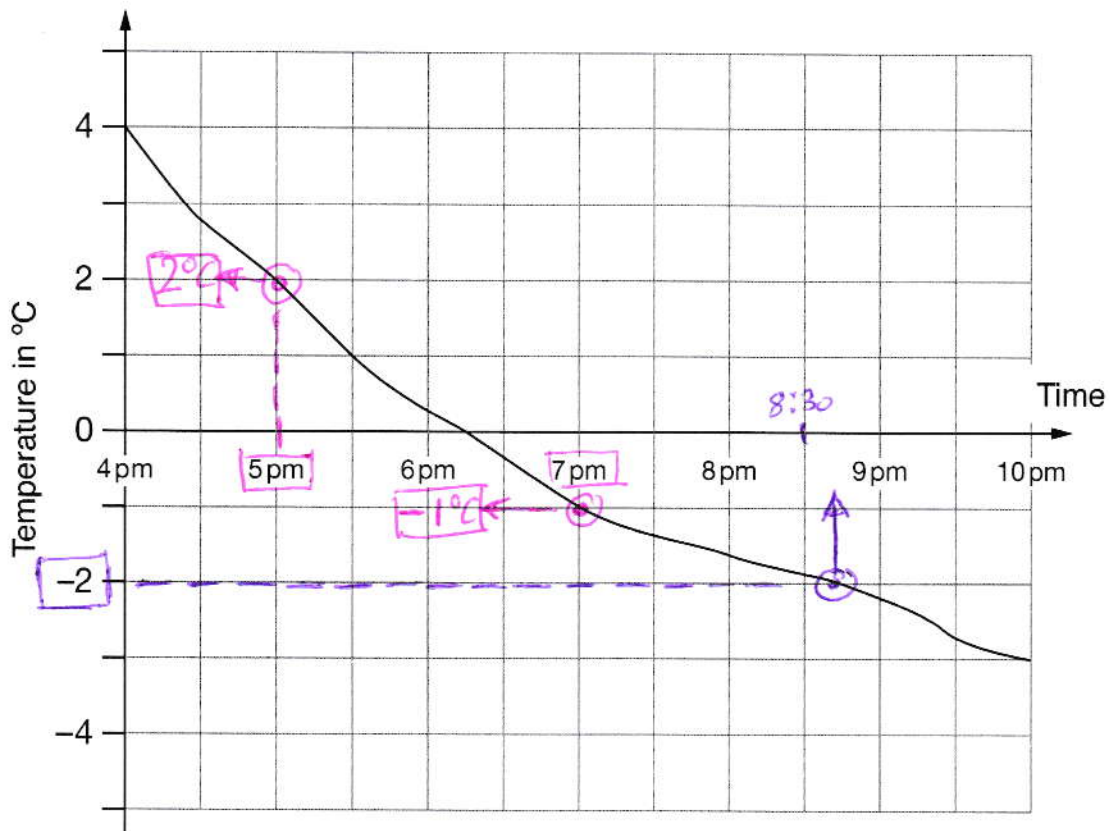
What was the population of Cornwall in 2010?

MORE THAN HALFWAY  
BETWEEN 500,000 AND  
550,000

✍ 530\,000

[3 marks]

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



At what time was the temperature  $-2^{\circ}\text{C}$ ?



8:40 PM

[APPROX.]

8:40 → 8:45]

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

5pm →  $2^{\circ}\text{C}$

7pm →  $-1^{\circ}\text{C}$

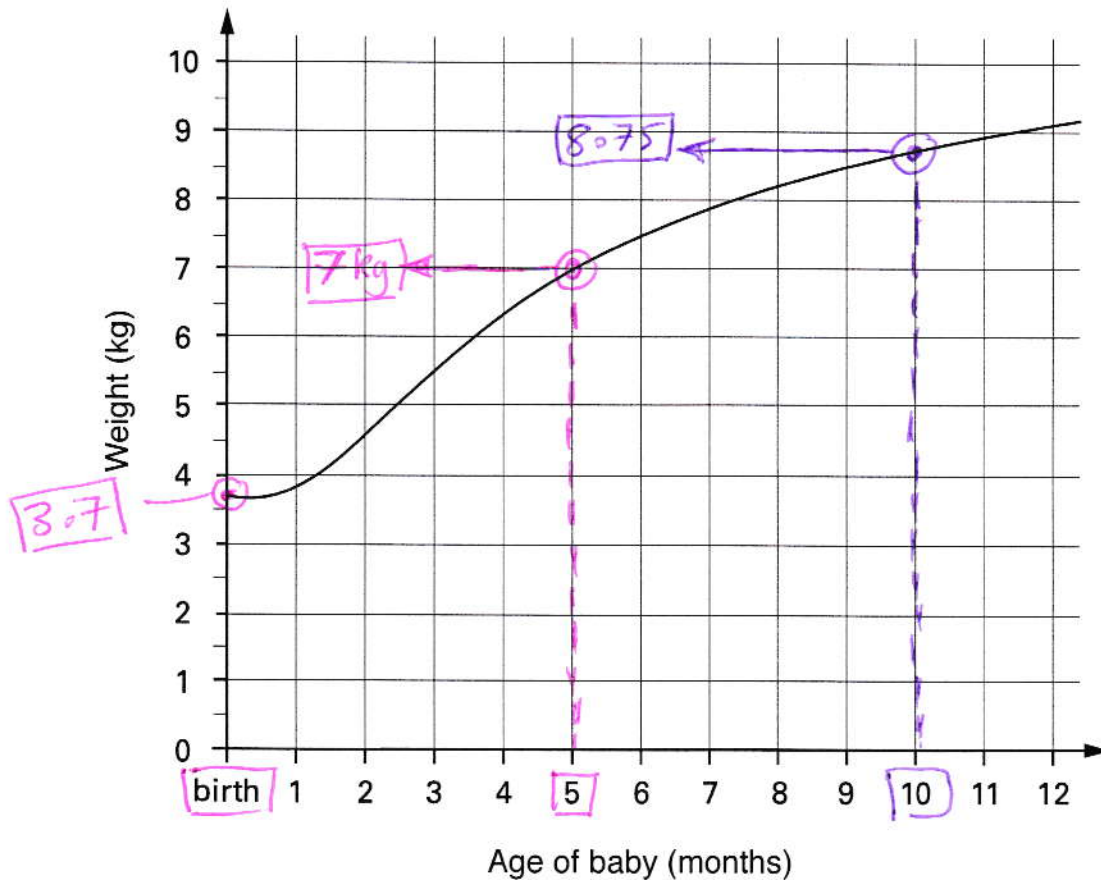


3 degrees


[2 marks]

5

This graph shows how the weight of a baby changed over twelve months.




From the graph, what was the weight of the baby at 10 months?

 8.75 kg  
 $[8.6 \rightarrow 8.9]$

How much more did the baby weigh at 5 months than at birth?

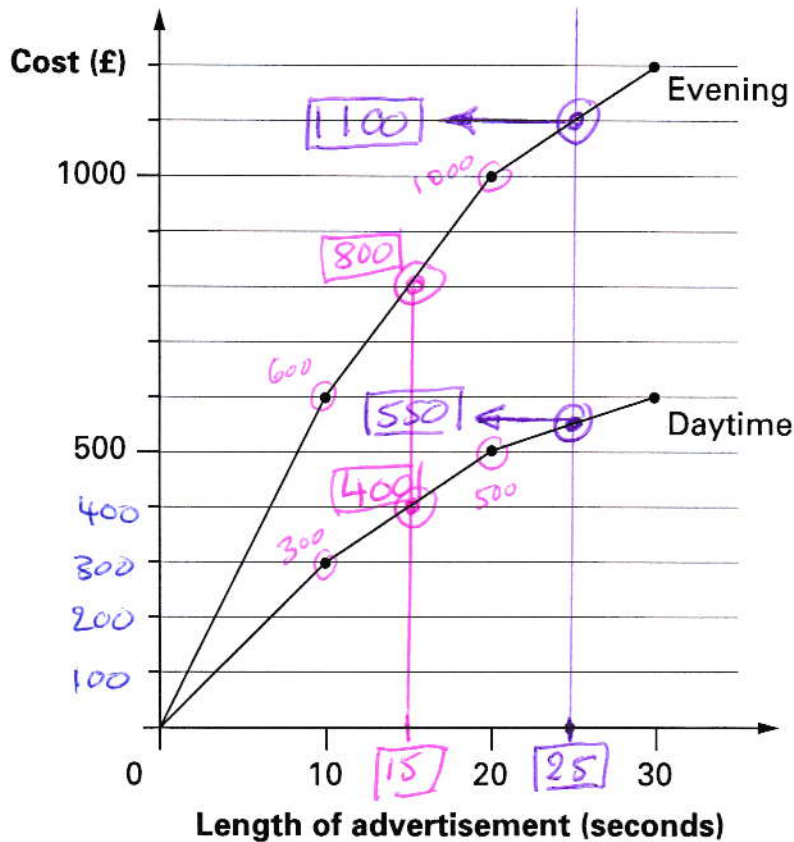
$$7 - 3.7$$

 3.3 kg

[2 marks]

6

This chart gives the cost of showing advertisements on television at different times.



An advertisement lasts **25 seconds**. Use the graph to estimate how much **cheaper** it is to show it in the **daytime** compared with the **evening**.

$$1100 - 550$$



**£ 550**

An advertisement was shown in the **daytime** and again in the **evening**.

The total cost was **£1200**

I USED "TRIAL AND IMPROVEMENT"  
[WORKED OUT 10 SECS, 20 SECS, THEN 15 SECS]

How long was the advertisement in seconds?

10 SECS COST £900

20 SECS COST £1500

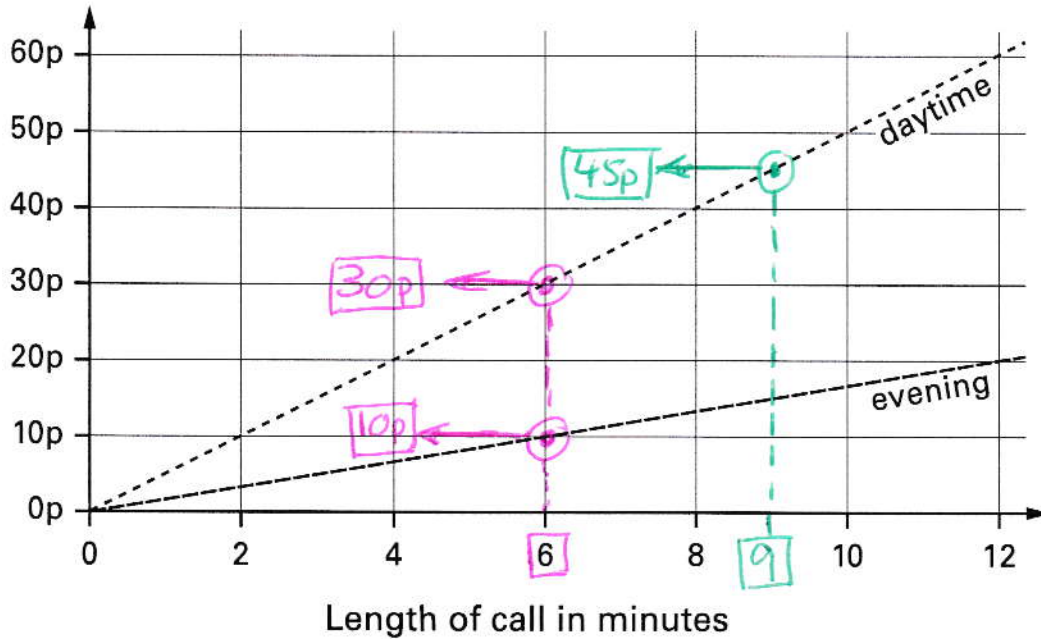


**15 seconds**

[2 marks]

7

This graph shows the cost of phone calls in the daytime and in the evening.



How much does it cost to make a **9 minute** call in the **daytime**?



45 p

How much **more** does it cost to make a **6 minute** call in the **daytime** than in the **evening**?

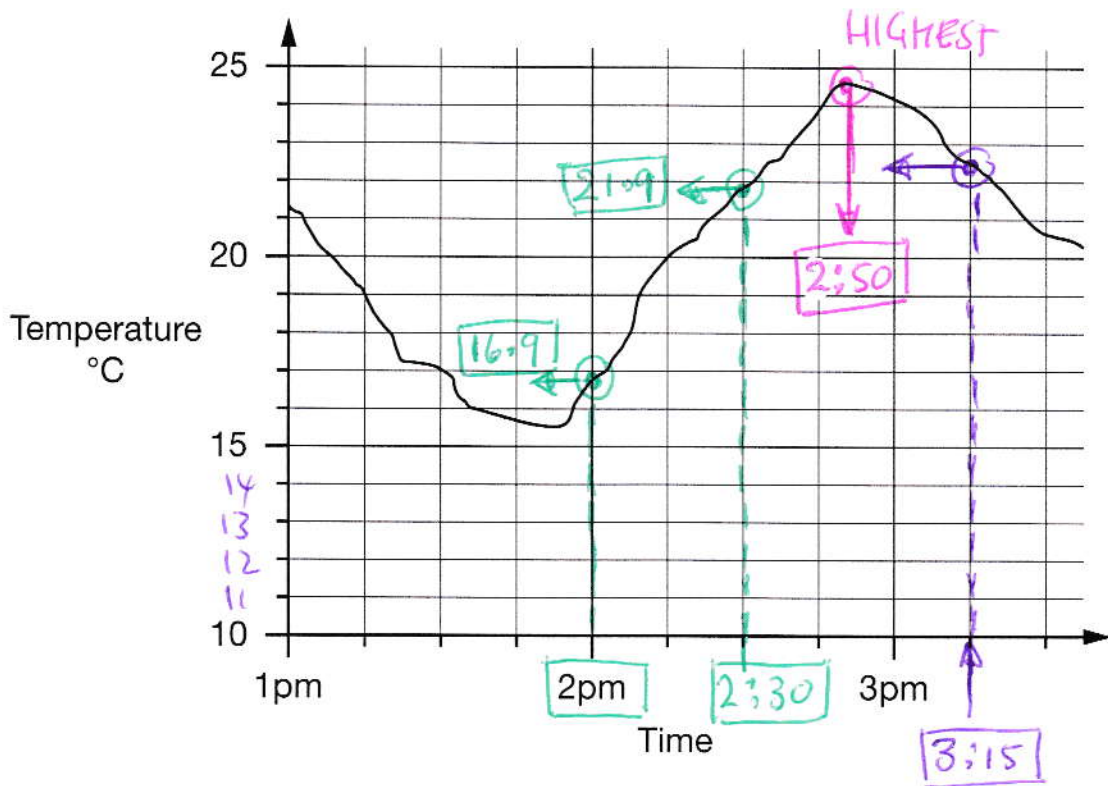
30 - 10




20 p

[2 marks]


- 8 | This graph shows how the temperature changed in Liam's room one afternoon.



Estimate the temperature at 3:15 pm.


 22.5 °C

Estimate the time when the temperature was highest.

 2:50 pm

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

$$21.9 - 16.9$$

 5 degrees

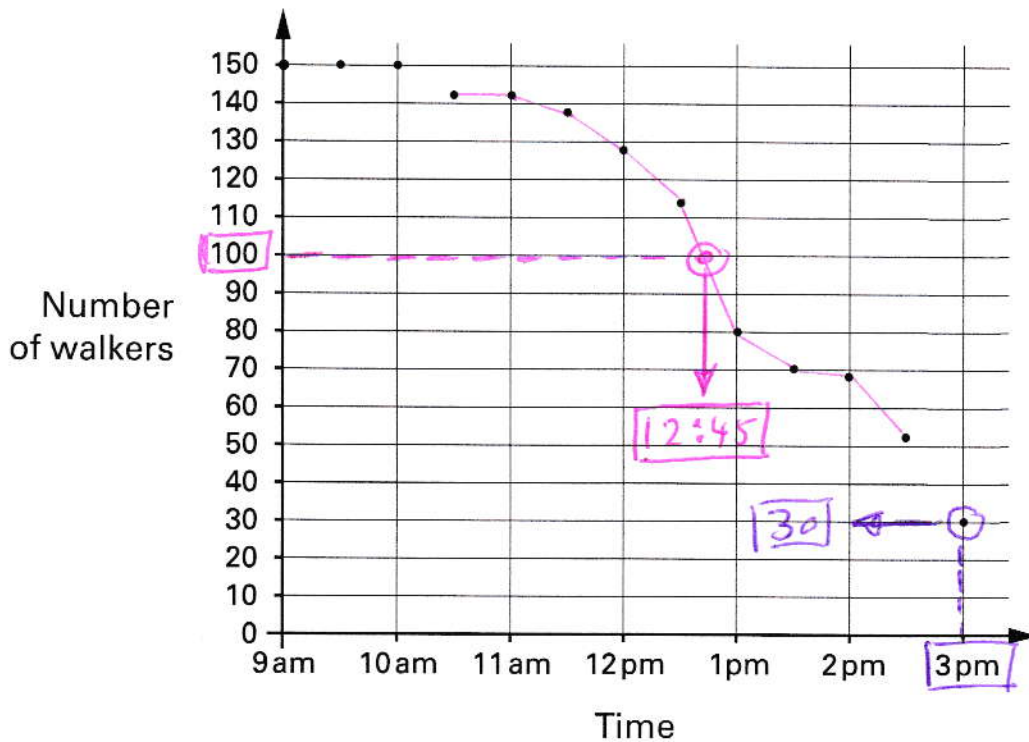
[3 marks]



9


150 people take part in a walk.

This chart shows the number of people still walking at different times.



Use the chart to estimate the **time** when **two-thirds** of the people are still on the walk.

$$\frac{2}{3} \text{ of } 150 = 100$$

 12:45

What **percentage** of the people who started are **still on the walk at 3pm**?

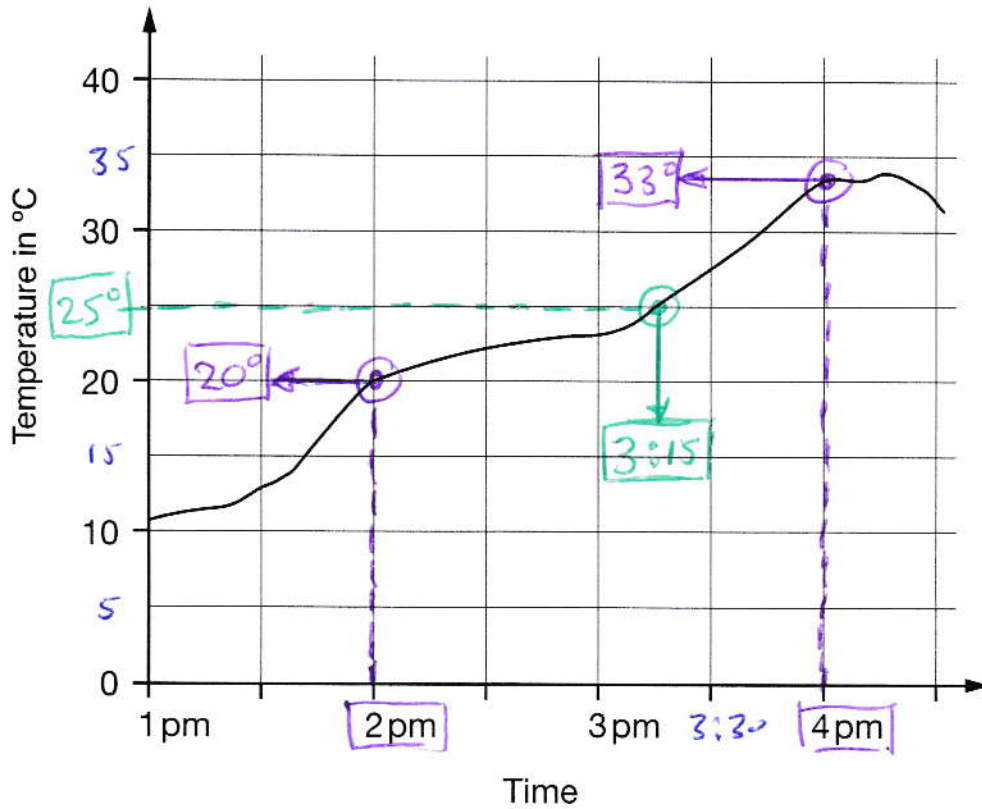
$$\begin{aligned} \frac{30}{150} \times 100 &= \frac{3}{15} \times 100 \\ &= \frac{1}{5} \times 100 \\ &= \boxed{20\%} \end{aligned}$$

[METHOD MARK] [ANSWER MARK]

[2 marks]

10

This graph shows the temperature in a greenhouse.



Use the graph to find the time when the temperature was  $25^{\circ}\text{C}$ .



3:15 PM

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

33-20



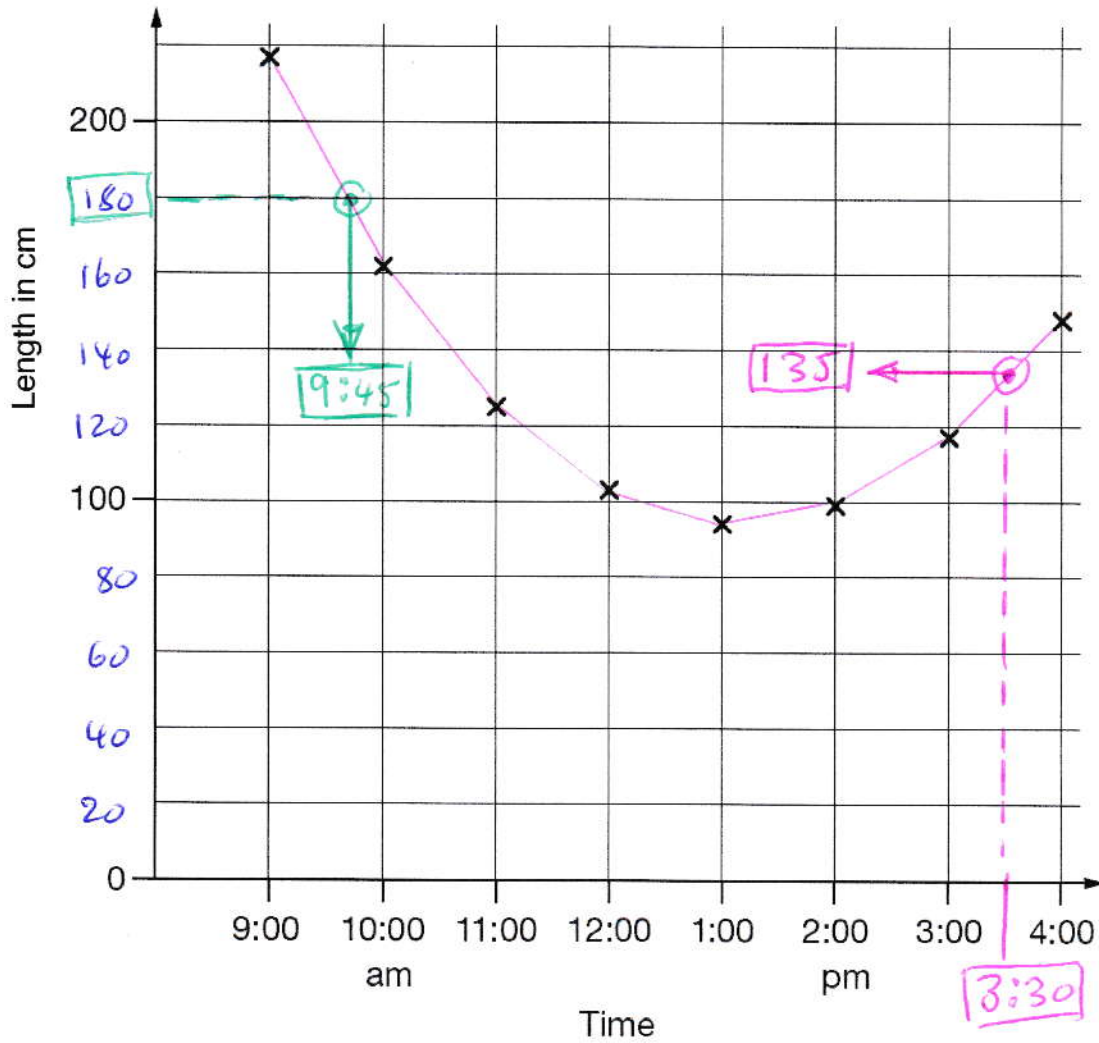
13 degrees

[ACCEPT 13 OR 14]

[2 marks]

11 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.

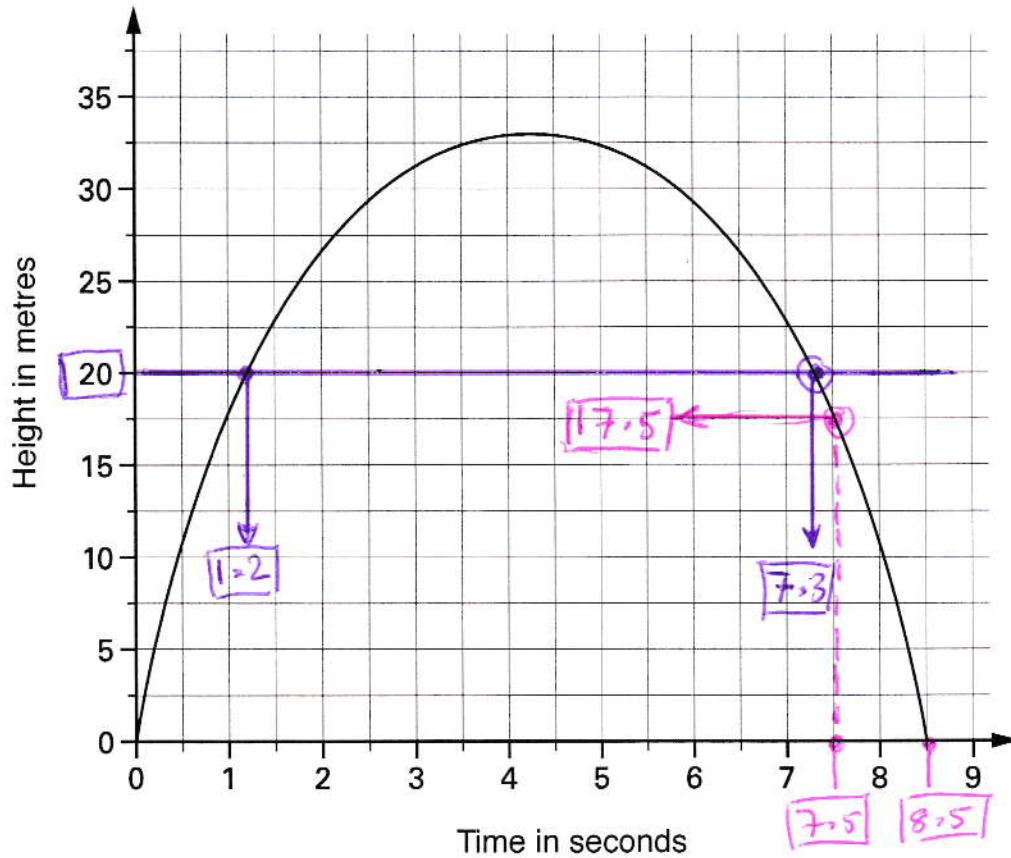
 **135 cm**  
[APPROX]

Estimate a time when her shadow was 180 centimetres long.

 **9:45**

[2 marks]

This is a graph of a firework rocket, showing its height at different times.



Estimate from the graph for how many seconds the rocket is more than 20 metres above the ground.

$$7.3 - 1.2$$



**6.1 seconds**

[APPROX]

Estimate from the graph how many metres the rocket falls in the **last second** of its flight.

$$7.5 \rightarrow 8.5 \text{ SECONDS!}$$



**17.5 m**

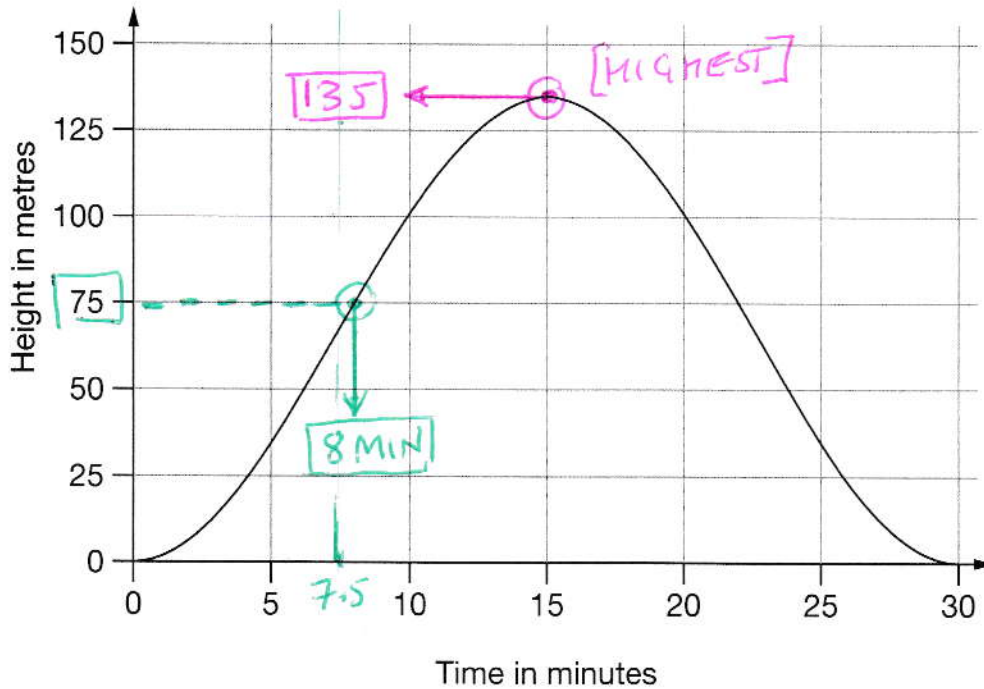
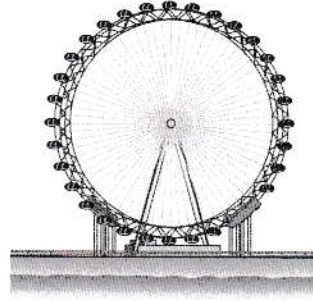
[2 marks]

13

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?

8 minutes

[MUST BE MORE THAN 7.5!]

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

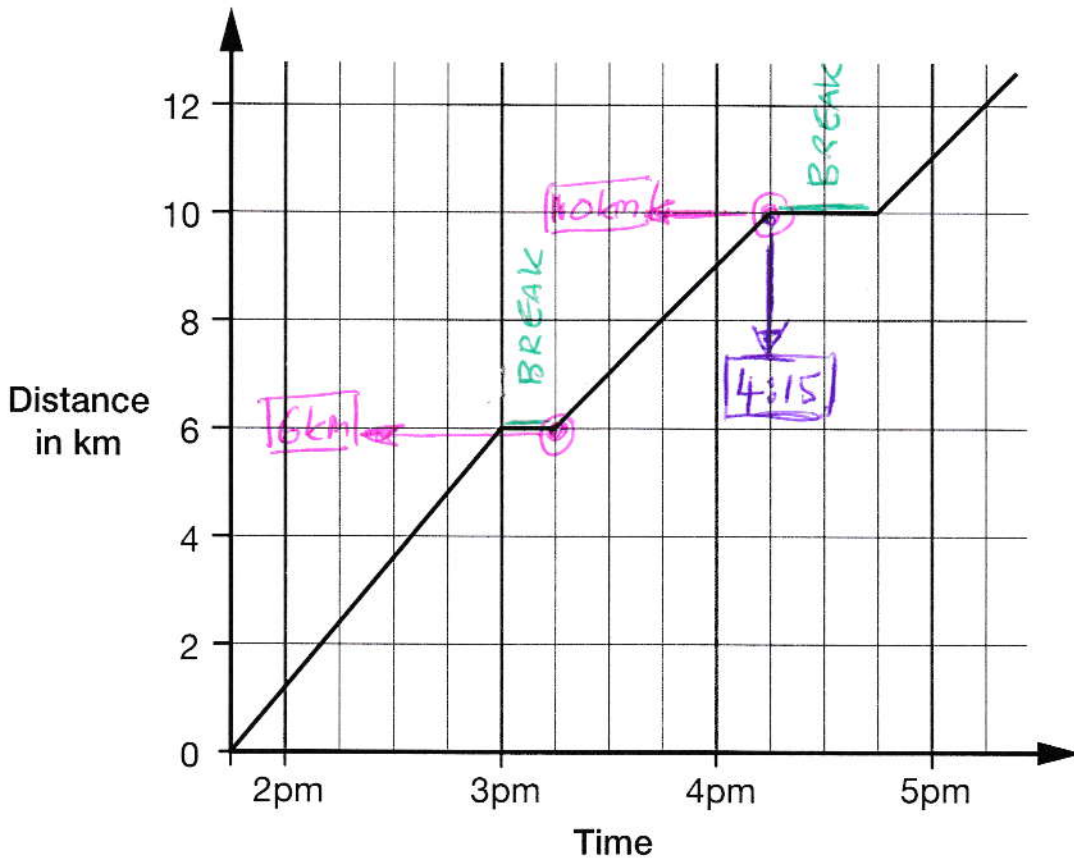
135 m

[MUST BE LESS THAN 137.5!]

[2 marks]

14

This graph shows the distance Alfie and Chen walked in an afternoon. They started at 1:45pm and had two breaks.



How many kilometres did they walk **between** the first and second breaks?

$$10 - 6$$



4 km

At what time did Alfie and Chen **start** their second break?



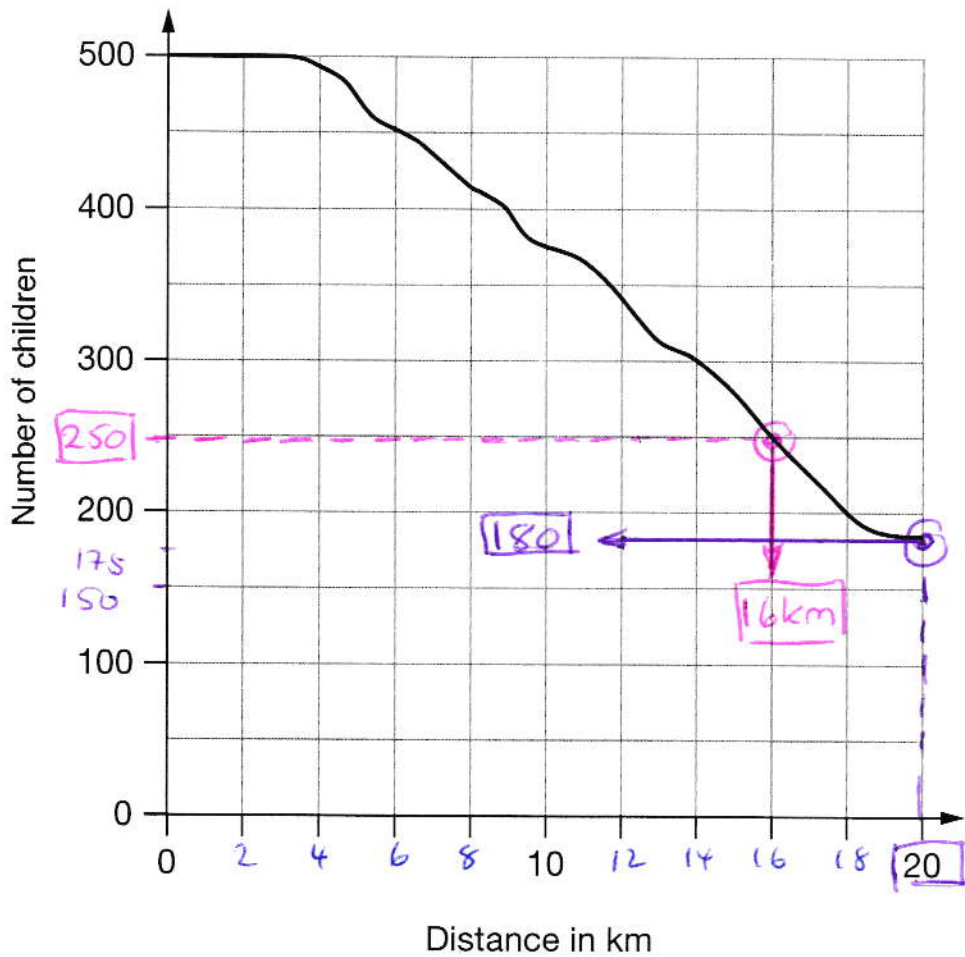
4:15

[2 marks]

15

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?

$$\frac{1}{2} \text{ OF } 500 = \underline{\underline{250}}$$



16 km

Estimate how many children completed the 20 kilometre cycle ride.

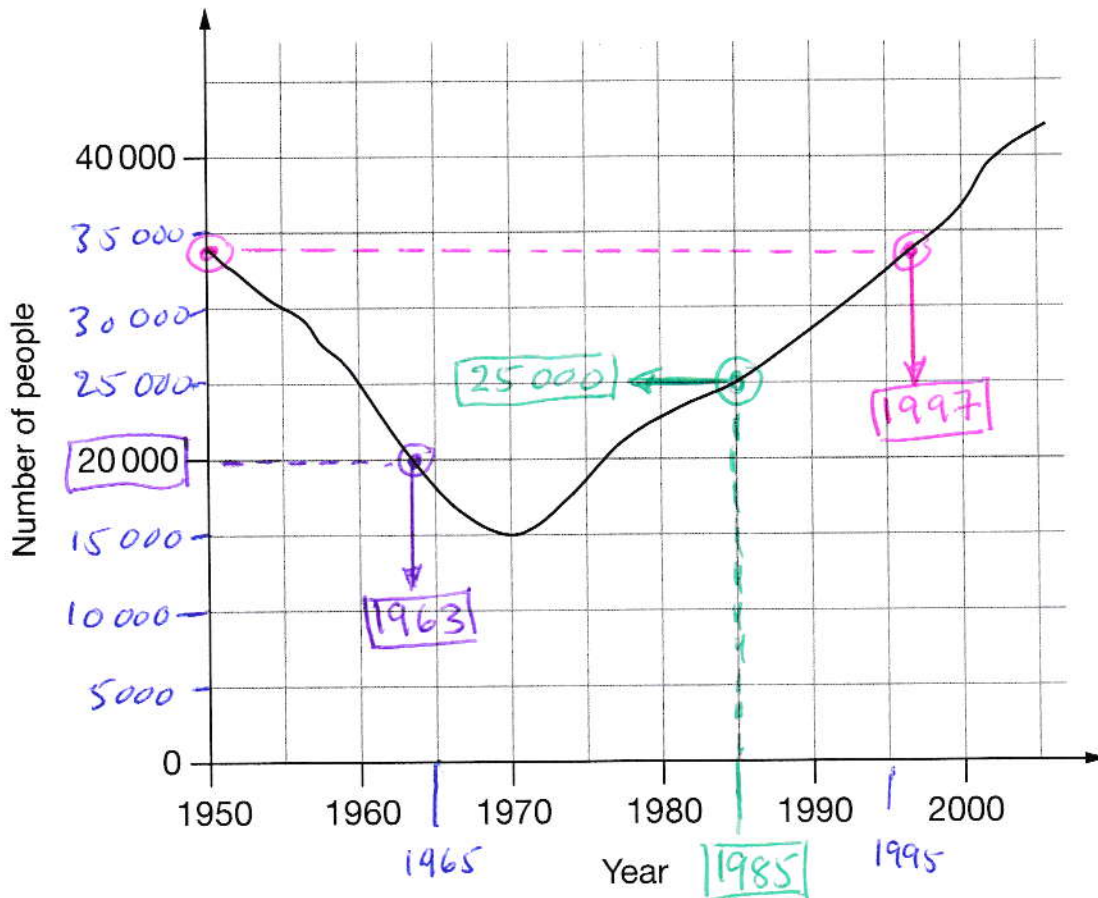


180

[MUST BE MORE THAN 175!]


[2 marks]

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




Look at the graph.


How many people lived in the town in 1985?

 25 000

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

 1997  
 [ACCEPT 1996,  
 BUT NOT 1998!]

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

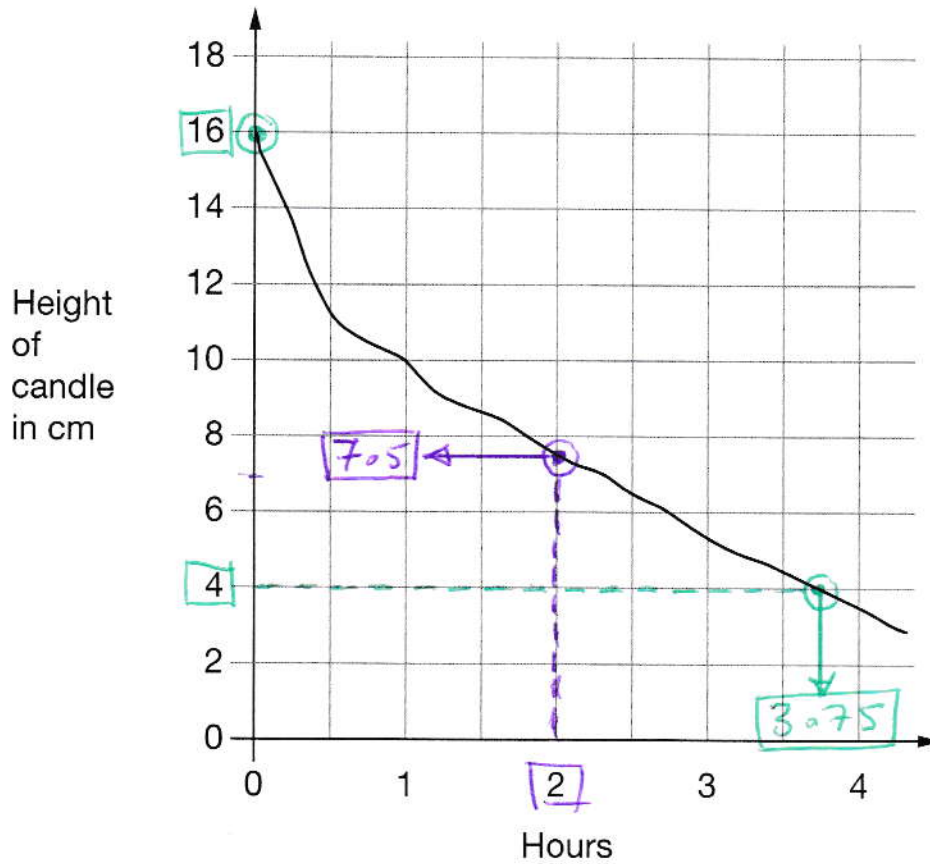
 1963  
 [ACCEPT 1964,  
 BUT NOT 1962]

[3 marks]



17

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?



7.5 cm

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



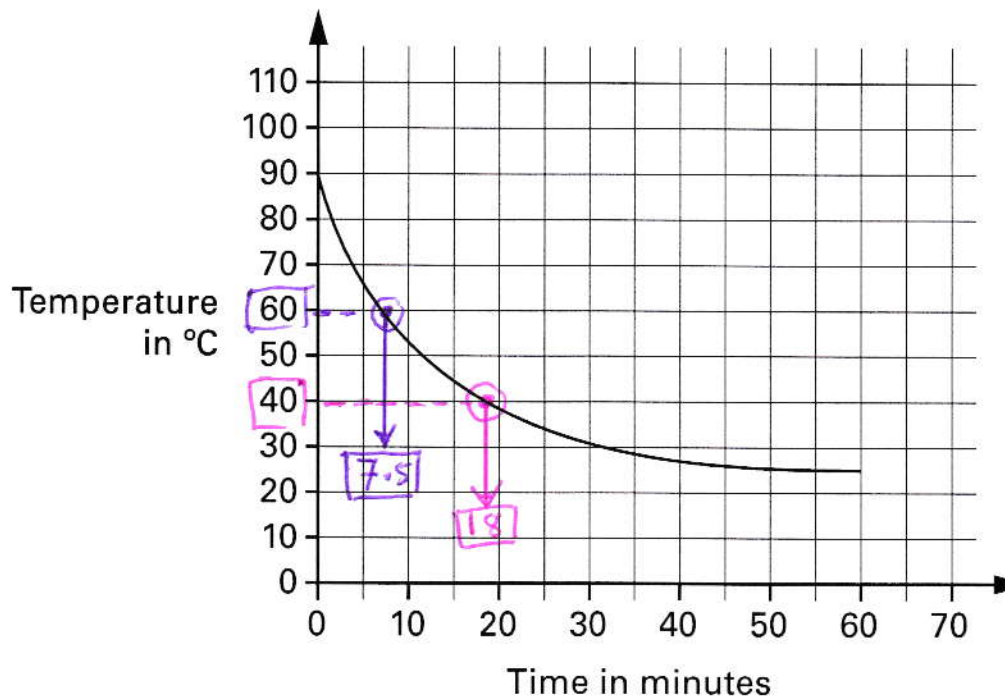
3.75 Hours

[3 hours 45 mins]

[2 marks]

A hot liquid is left to cool in a science experiment.

This graph shows how the temperature of the liquid changes as it cools.



Read from the graph **how many minutes** it takes for the temperature to reach **40°C**



**18** minutes

[NOT 17!]

Read from the graph **how many minutes** the temperature is **above 60°C**



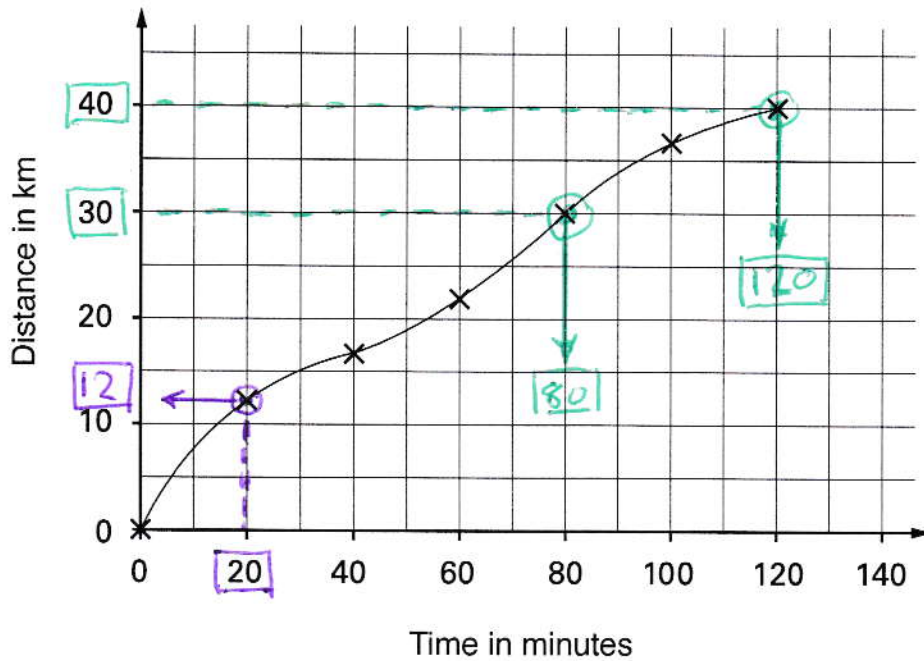
**7.5** minutes

[ACCEPT 7 MIN,  
BUT NOT 8 MIN]

[2 marks]

Carol went on a **40-kilometre** cycle ride.

This is a graph of how far she had gone at different times.



How many minutes did Carol take to travel the **last 10 kilometres** of the ride?

[FROM 30KM UNTIL END]

$$120 - 80$$

40 minutes

Use the graph to estimate the distance travelled in the **first 20 minutes** of the ride.

12 km

Carol says,

*'I travelled further in the first hour than in the second hour.'*

[BETWEEN 12 AND 12.5]

Explain how the graph shows this.

AFTER ONE HOUR SHE HAD TRAVELLED MORE THAN 20 KM, WHICH IS MORE THAN HALF-WAY.