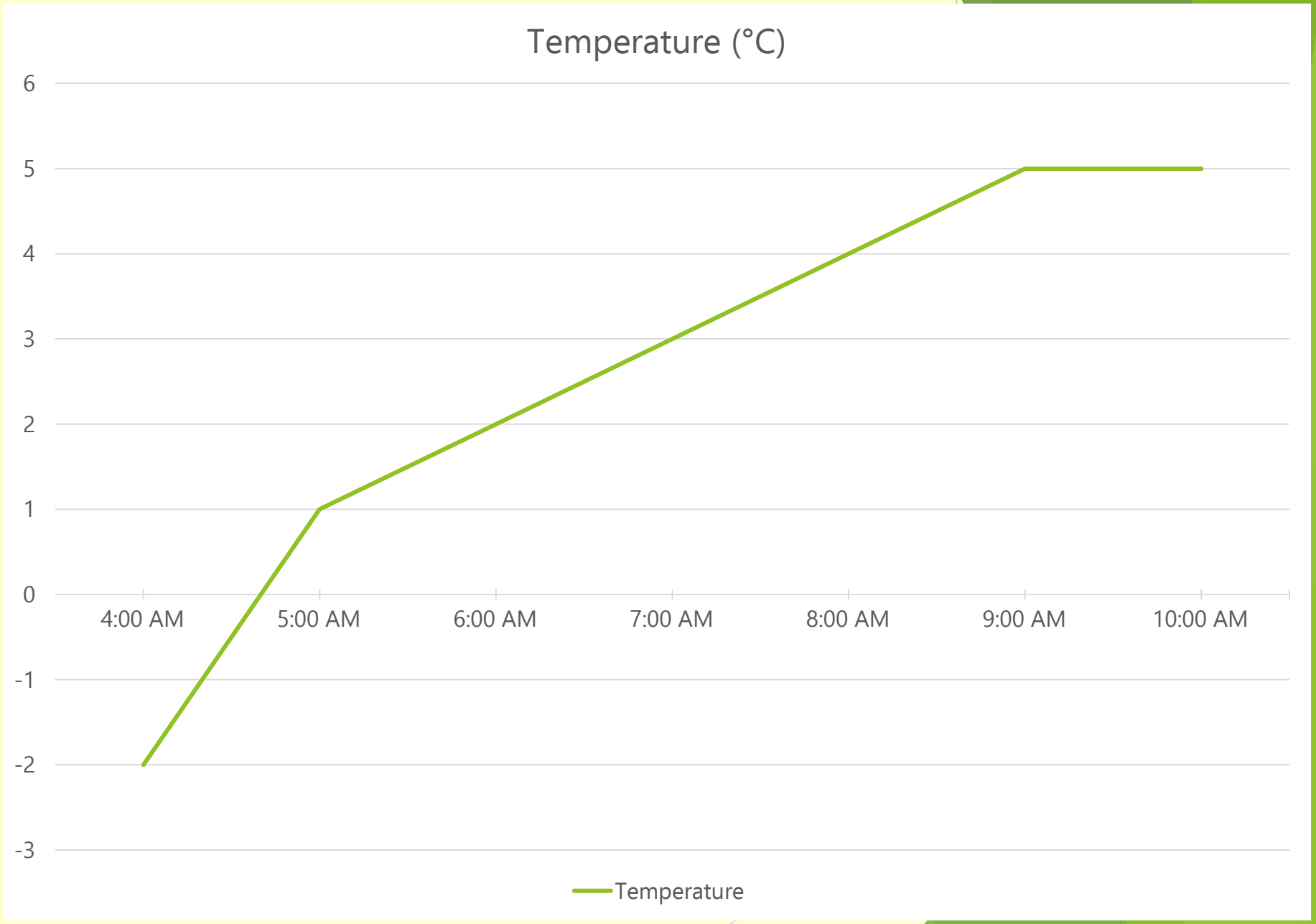
Statistics

Day 1

Starter

Look at the line graph provided, which measurement doesn't belong?



Starter - ANSWERS

The 4 am measurement doesn't belong as it is a negative reading of $-2^{o}C$.

Key Vocabulary

Date: Day 1

LO: To be able to read and interpret line graphs.

Success Criteria

I can use my knowledge of using scales to read and interpret line graphs.

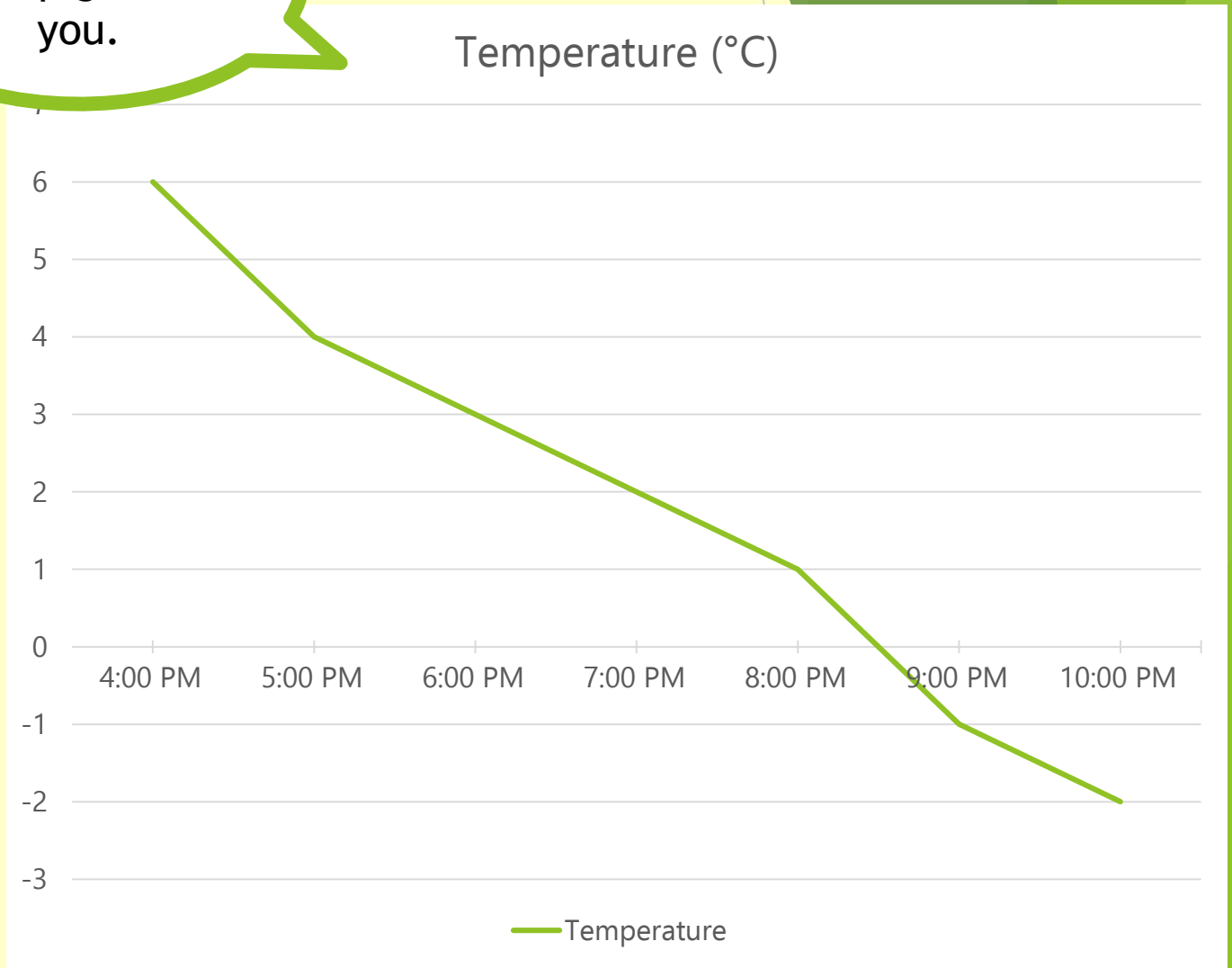
I can explain my reasoning.

Descriptive Doing

Use a ruler to help guide you.

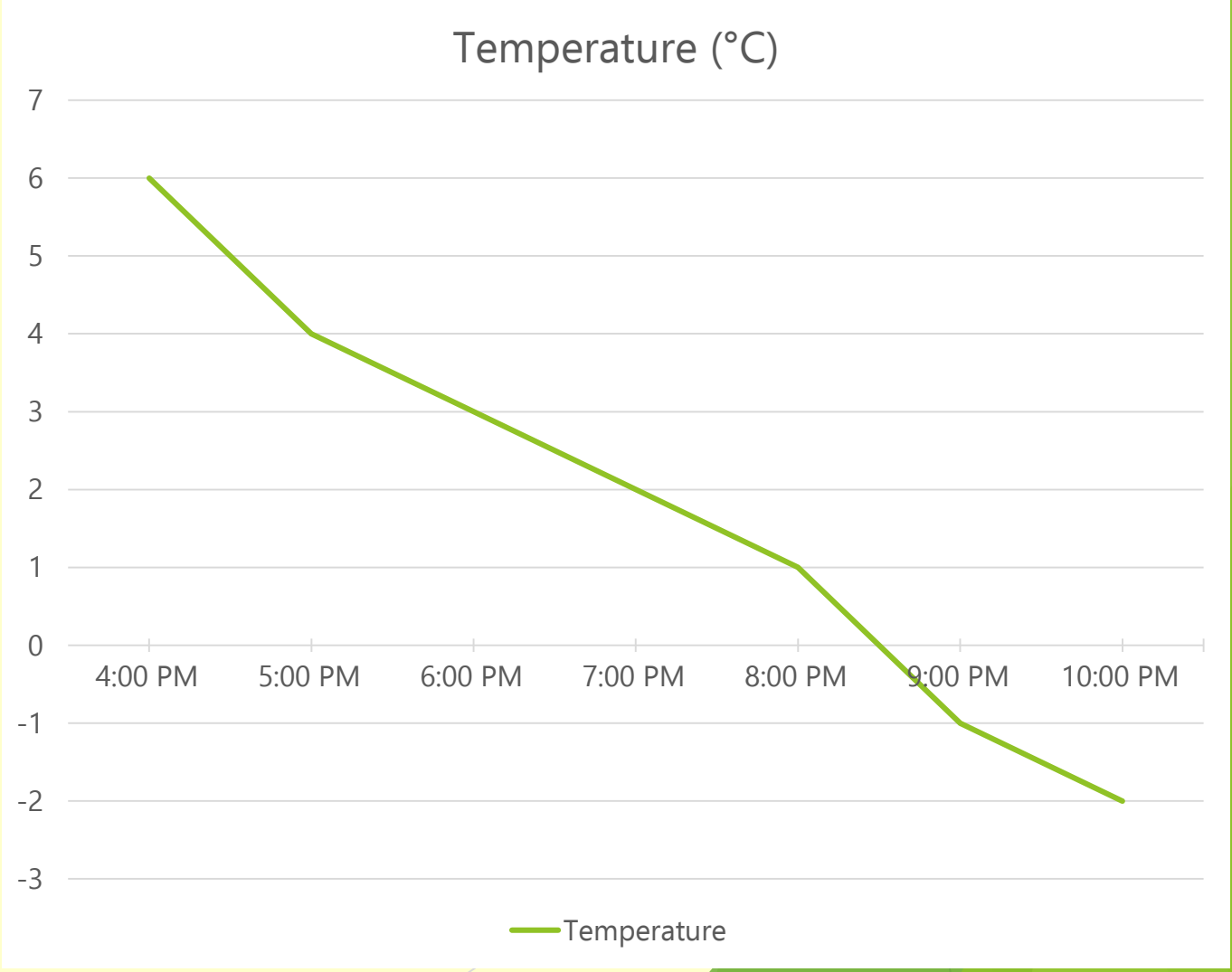
Answer the following questions:

a) What was the temperature at 6:00 pm?
b) What is the hottest recorded temperature?
c) At what time was the temperature 2°C?
d) At what time was the temperature -2°C?



Descriptive Doing - ANSWERS

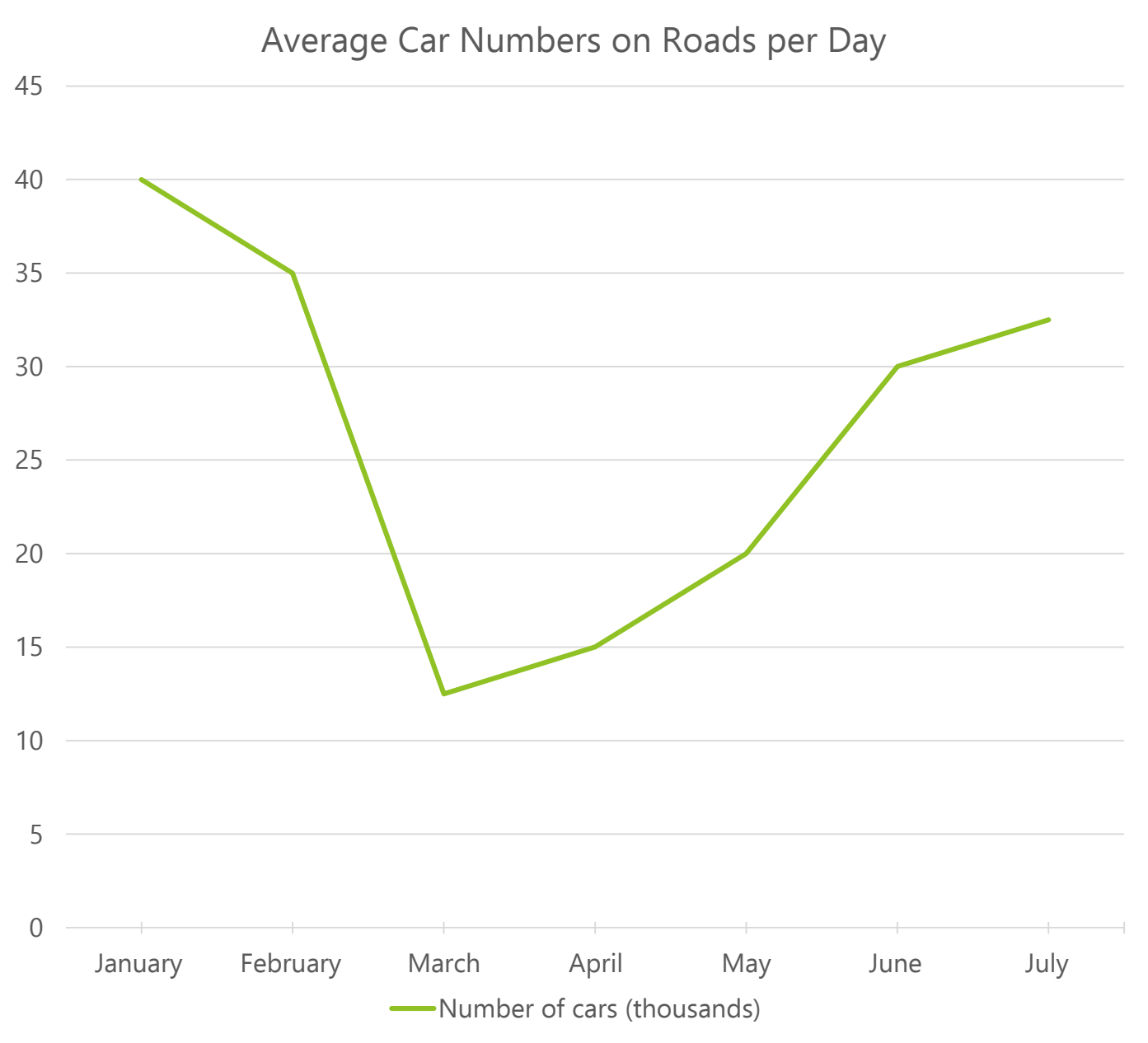
a) 3°C
b) 6°C
c) 7:00 pm
d) 10:00 pm



Descriptive Doing

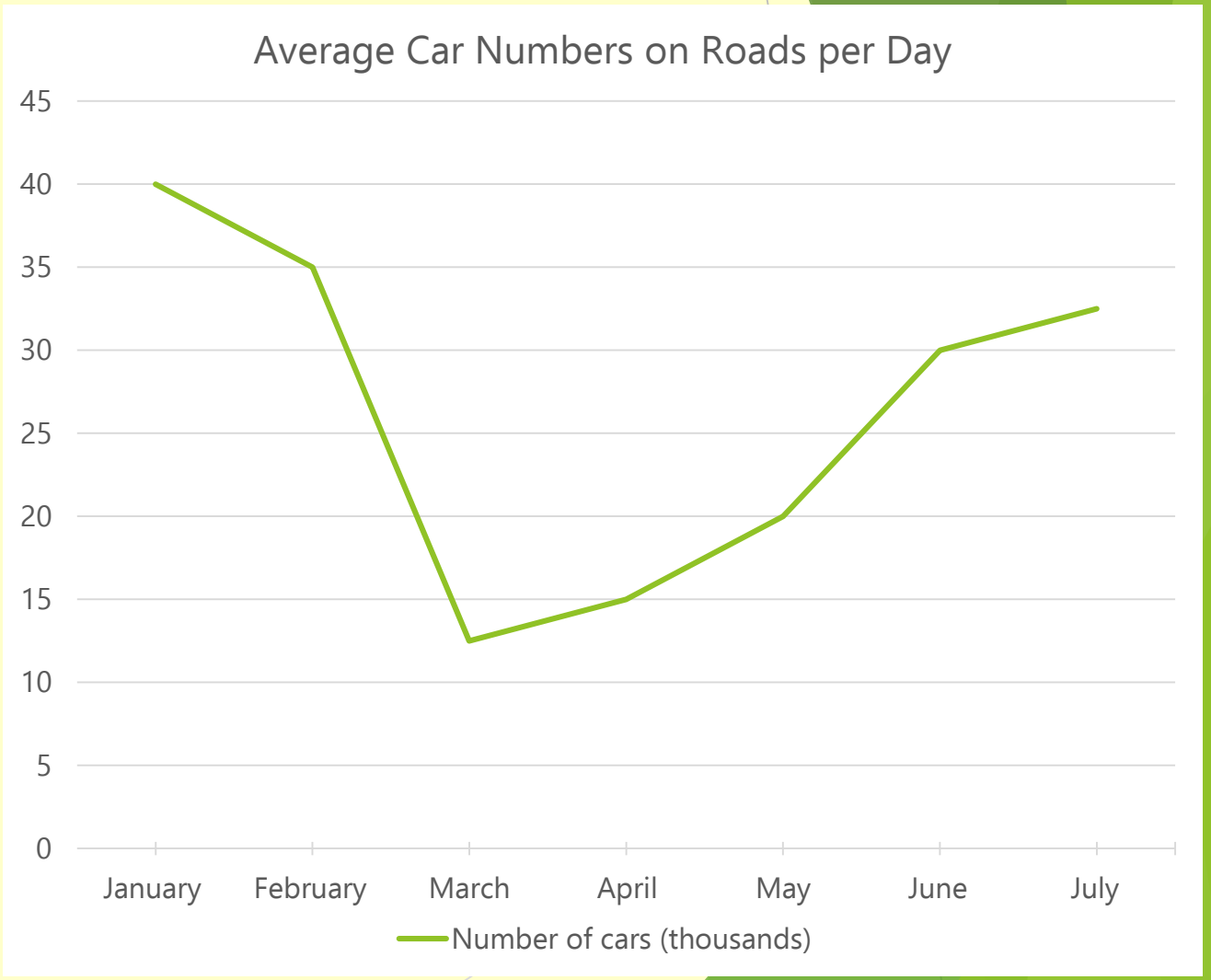
Answer the following questions:

a) What is the difference between the most and least amounts of cars on the town's roads?
b) Which months saw a 10,000 increase in cars?
c) What do you think happened after March?



Descriptive Doing - ANSWERS

a) The most amount of cars is 40,000, the least is 12,500. So, the difference is 27,500.
b) Between May and June car use increased by 10,000.
c) People were encouraged to use their cars again.



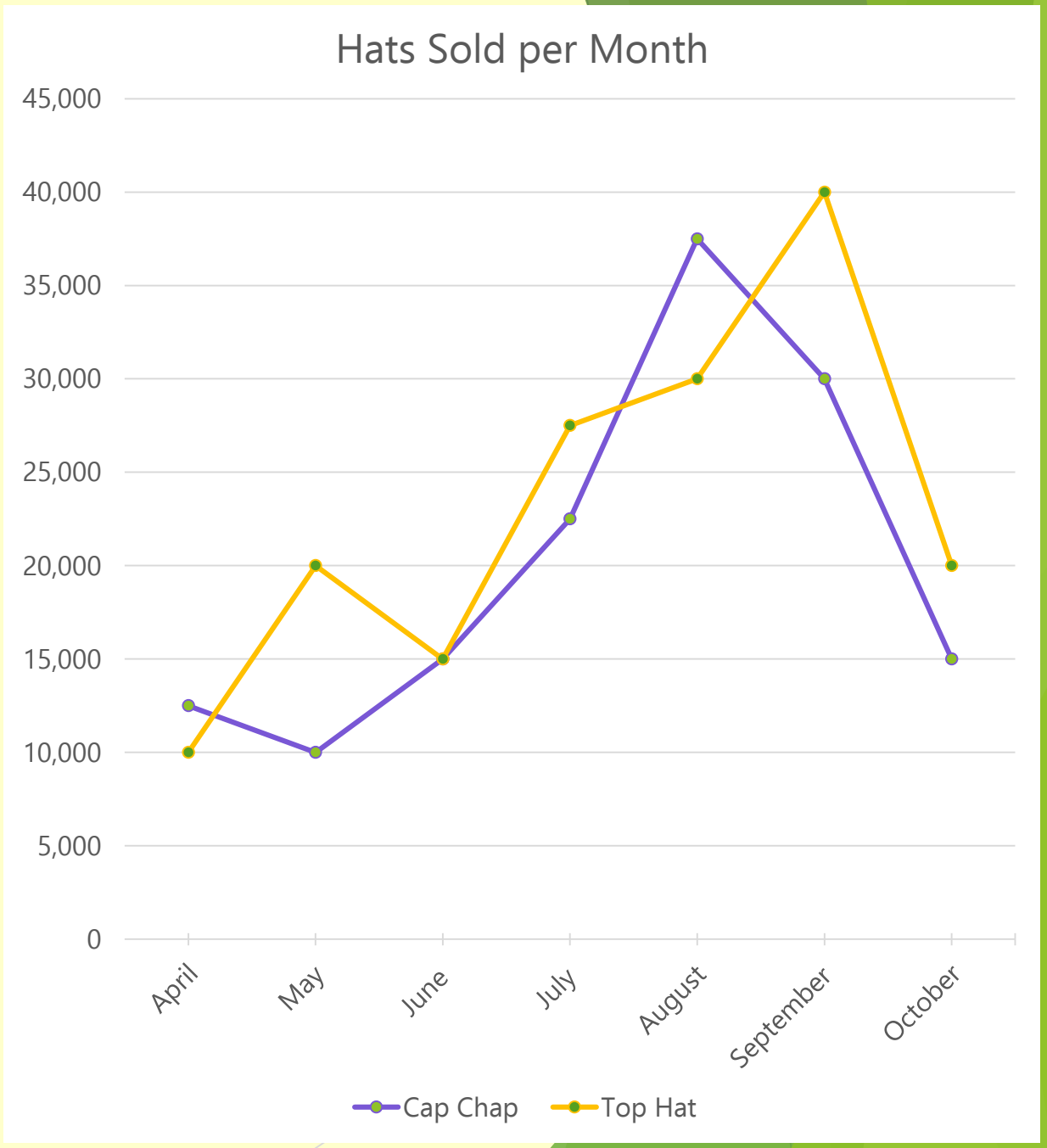
Reflective Doing

Answer the following questions:

a) In which month did both shops sell the same number of hats?

b) How many more hats did Cap Chap sell than Top Hat in April?

c) Another hat shop – Lit Lids - sold 5,000 more hats than Cap Chap each month, plot their line on the graph.

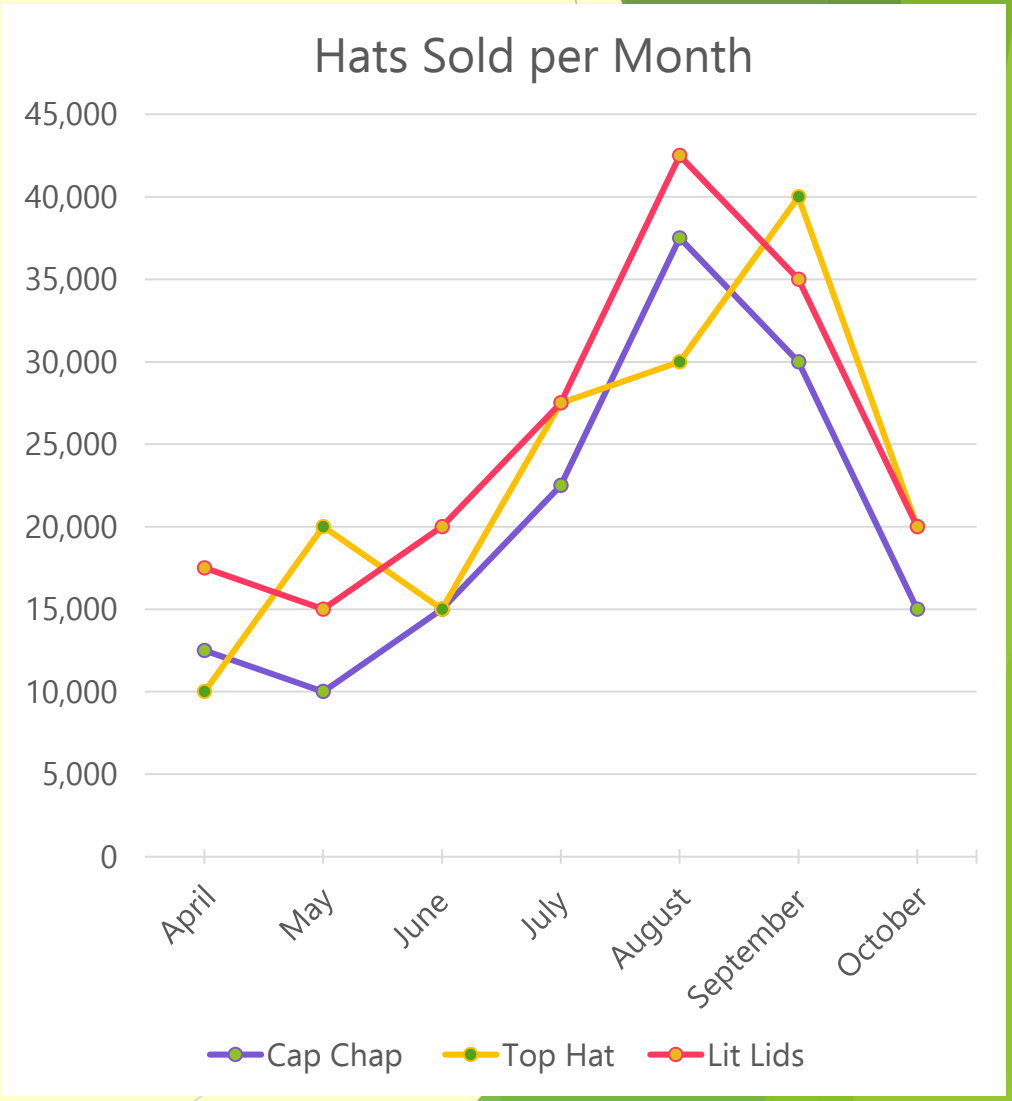


Reflective Doing - ANSWERS

a) Cap Chap and Top Hat sold the same amount of hats in June.

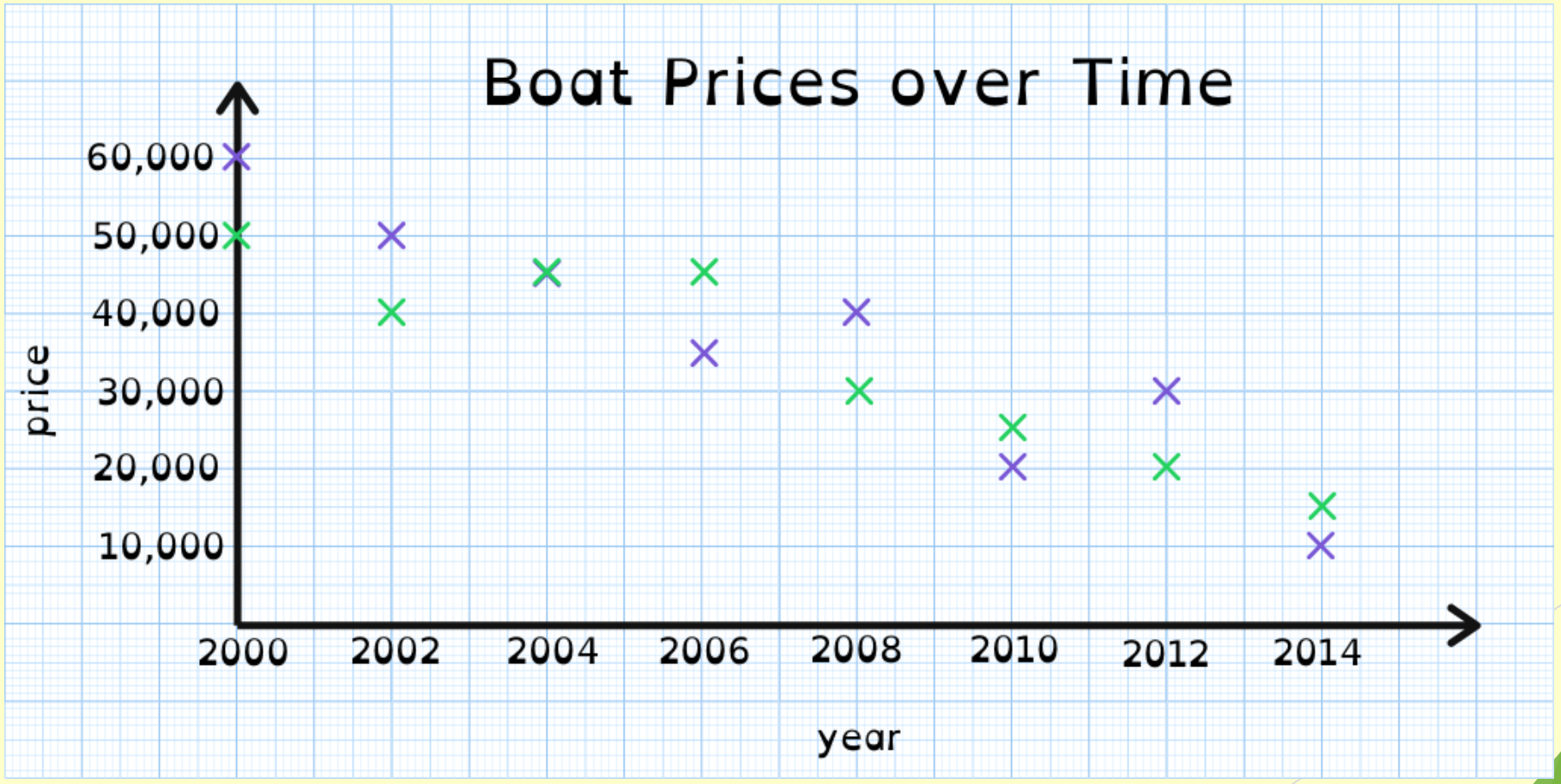
b) Cap Chap sold 2,500 more hats than Top Hat in April.

c) Another hat shop – Lit Lids - sold 5,000 more hats than Cap Chap each month, plot their line on the graph. (Red line)



Reflective Doing

Write your own questions based in the line graph below.



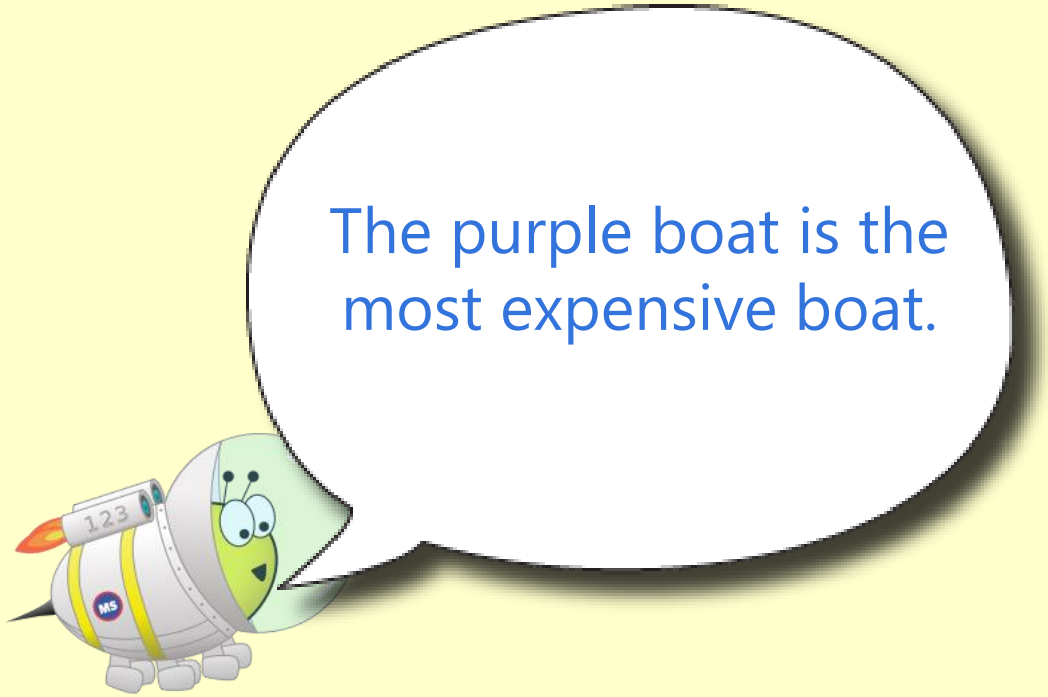
Choose your challenge

Challenges can be found on the document named ‘Maths Challenges Day 1’.

Choose an appropriate challenge OR work through green, orange and red.

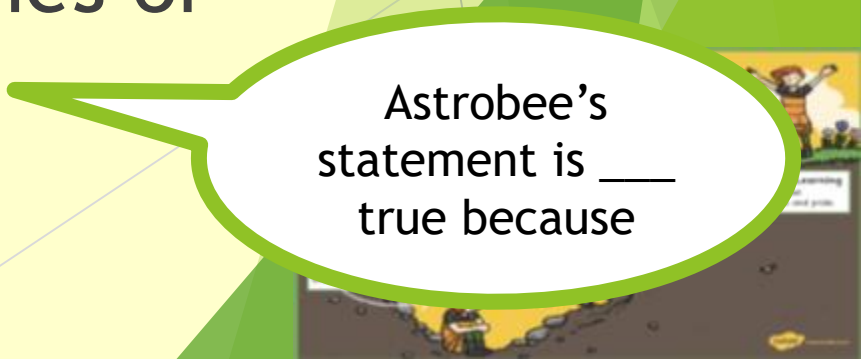
Answers can be found at the bottom of the document.

Reflection Time



Is Astrobee's statement always, sometimes or never true?

Explain your answer.



Reflection Time - ANSWERS

Astrobee's statement is only sometimes true. The purple boat is more expensive in 2000, 2002, 2008 and 2012, the same as the green boat in 2004, and cheaper in 2006, 2010 and 2014.

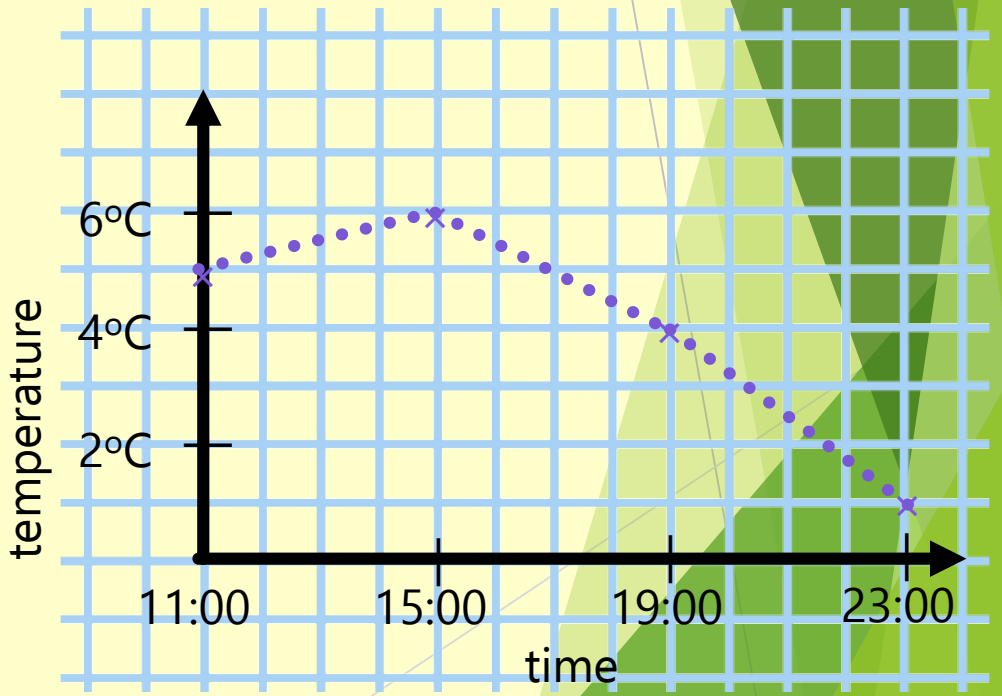
Statistics

Day 2

Starter

Look at the line graph provided, which measurement has been plotted incorrectly?

time	11 am	3 pm	7 pm	11 pm
temperature	5°C	7°C	4°C	1°C

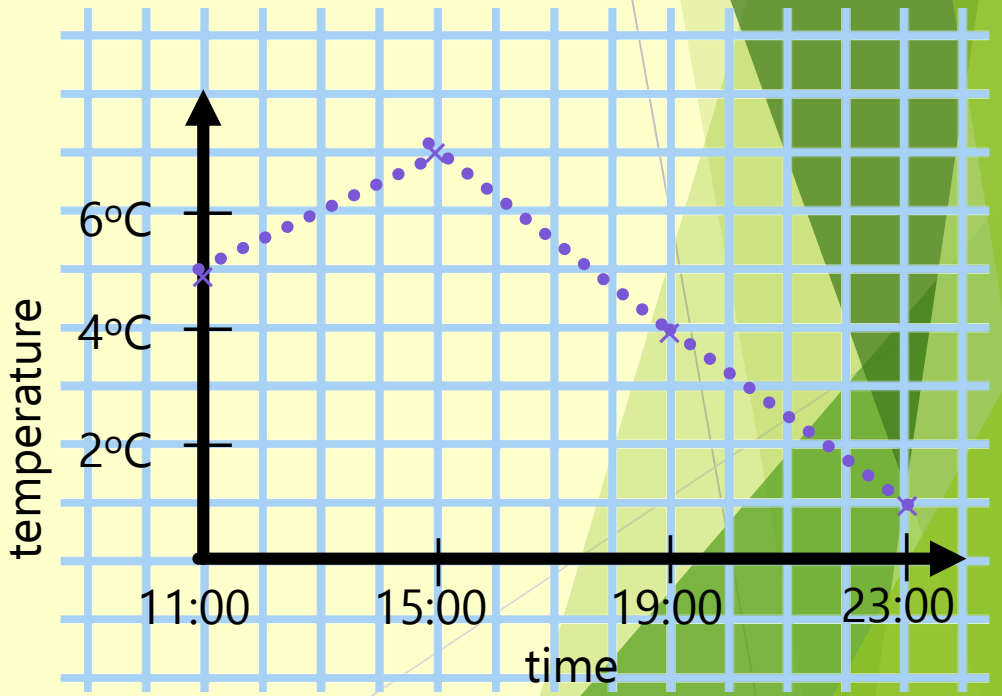


Correct the mistake.
Explain your answer.

Starter - ANSWERS

The 3 pm measurement was incorrect.
It was plotted at 6°C rather than 7°C.

time	11 am	3 pm	7 pm	11 pm
temperature	5°C	7°C	4°C	1°C



Key Vocabulary

Date: Day 2

LO: To be able to draw line graphs.

Success Criteria

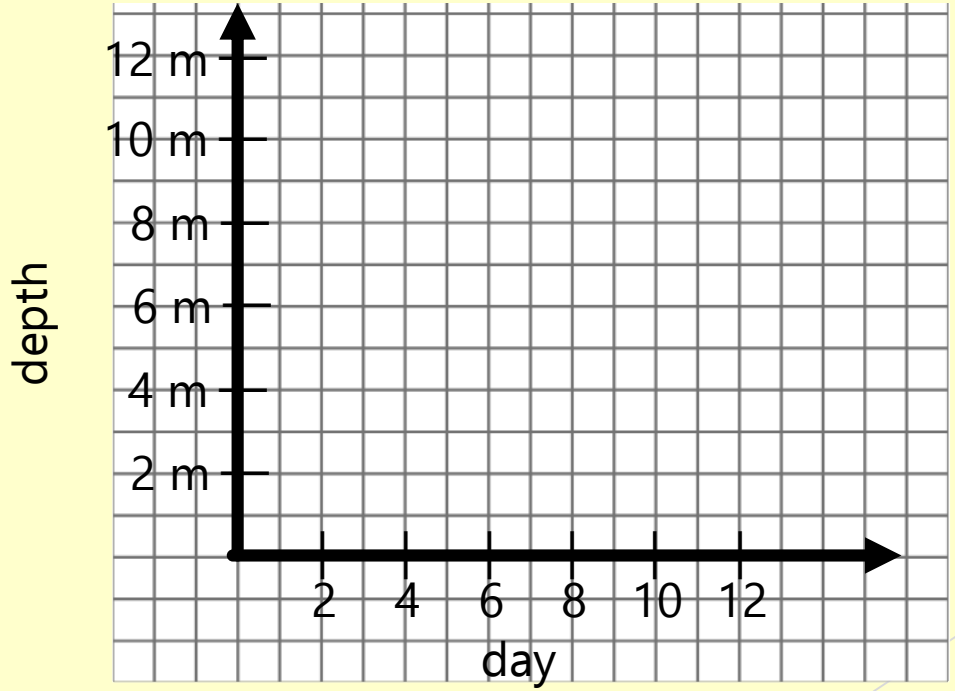
I can use my knowledge of using scales to read and interpret line graphs to correct and draw line graphs.

I can explain my reasoning.

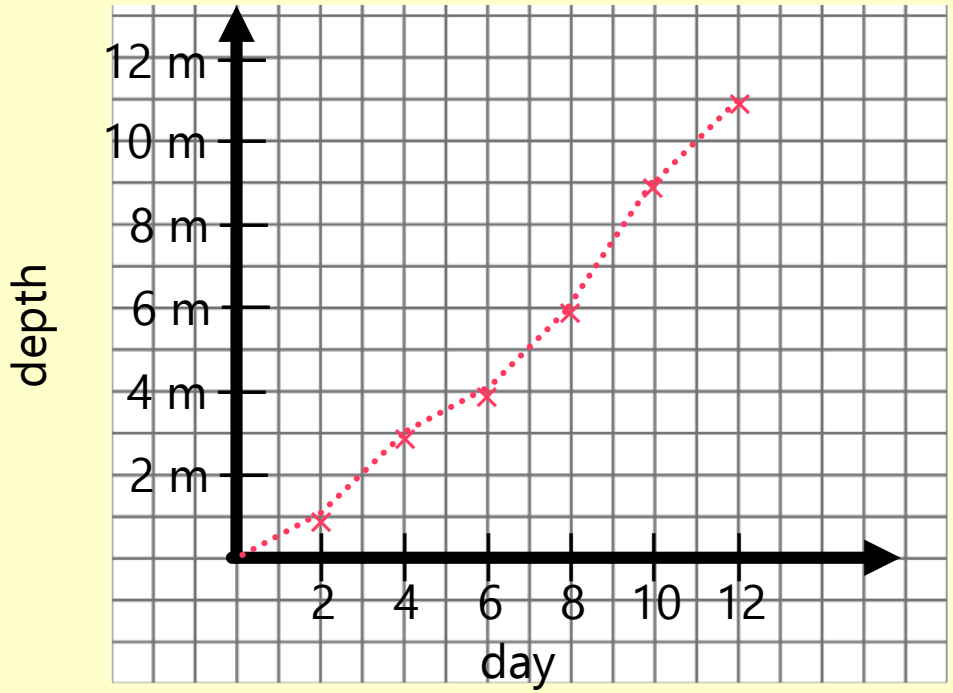
Descriptive Doing

Ruth and Jamal are digging a well. They record their progress every two days.
Plot their measurements as a line graph.

day	depth
2	1 m
4	3 m
6	4 m
8	6 m
10	9 m
12	11 m



Descriptive Doing - ANSWERS

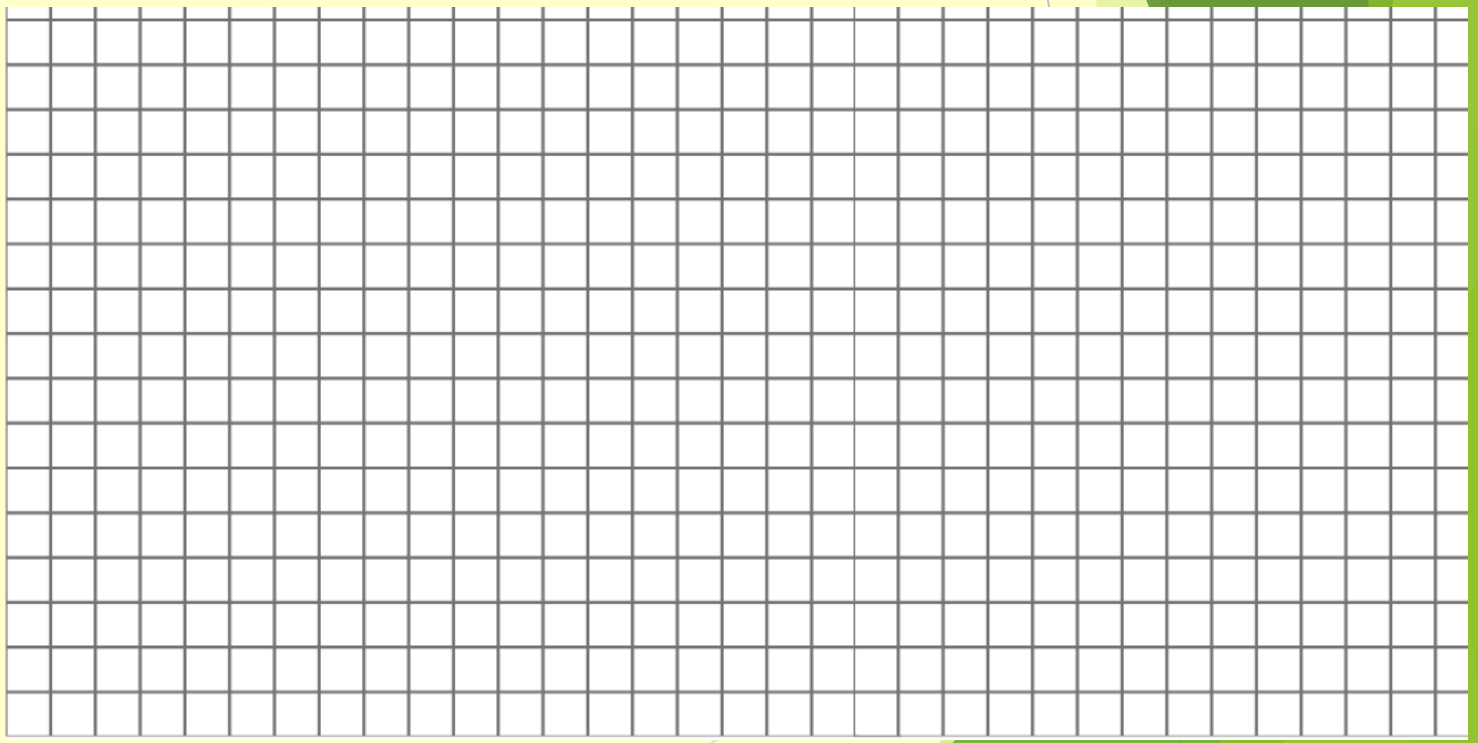


Descriptive Doing

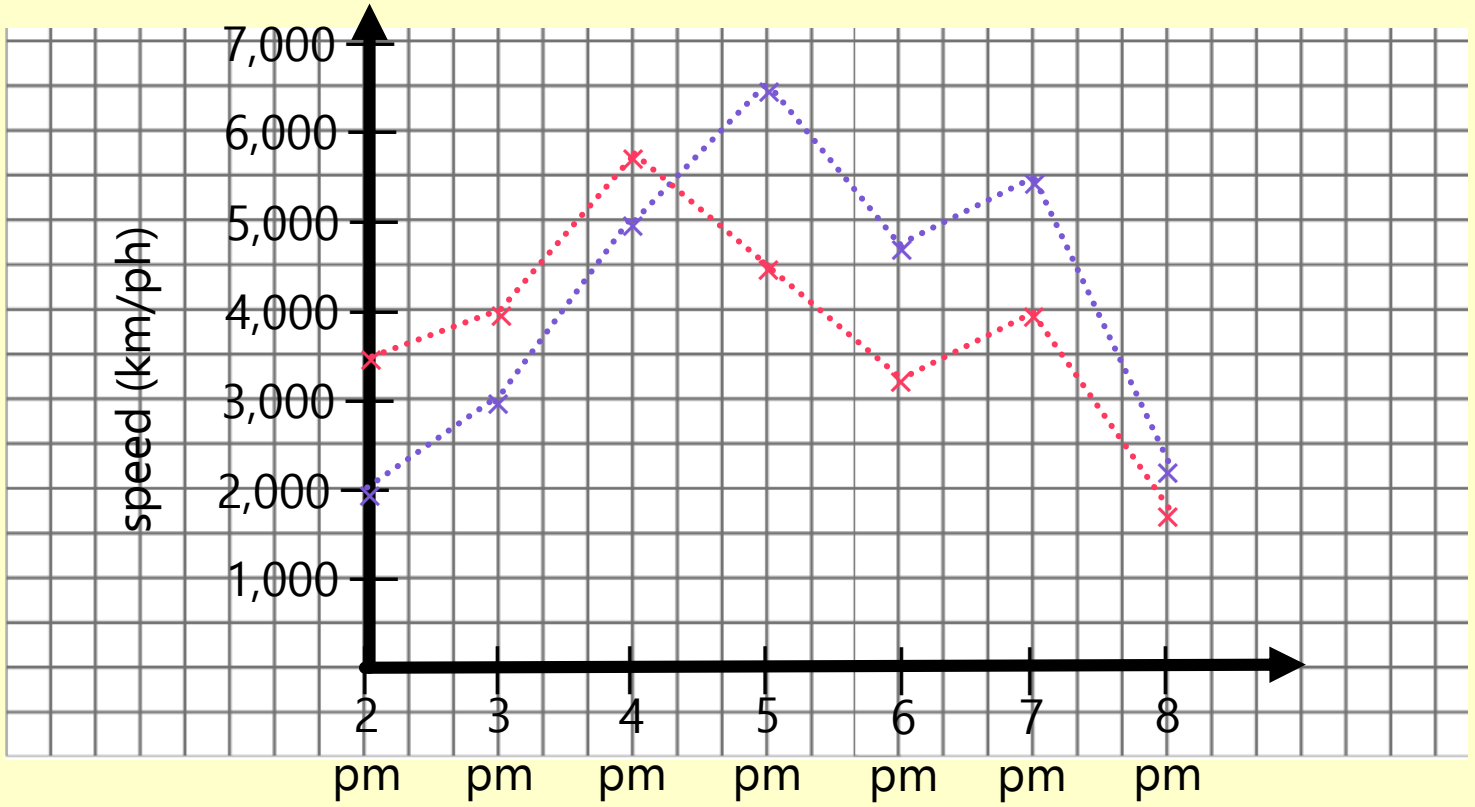
Remember to use an appropriate scale and label your axes!

The table shows the speed of two spacecrafts throughout a day. Plot a line graph.

time	ship 1's speed (km/ph)	ship 2's speed (km/ph)
2 pm	2,000	3,500
3 pm	3,000	4,000
4 pm	5,000	5,750
5 pm	6,500	4,500
6 pm	4,750	3,250
7 pm	5,500	4,000
8 pm	2,250	1,750



Descriptive Doing - ANSWERS



Reflective Doing

Complete a line graph based on the following sentences:

The bird is at 700 m at 2 pm.

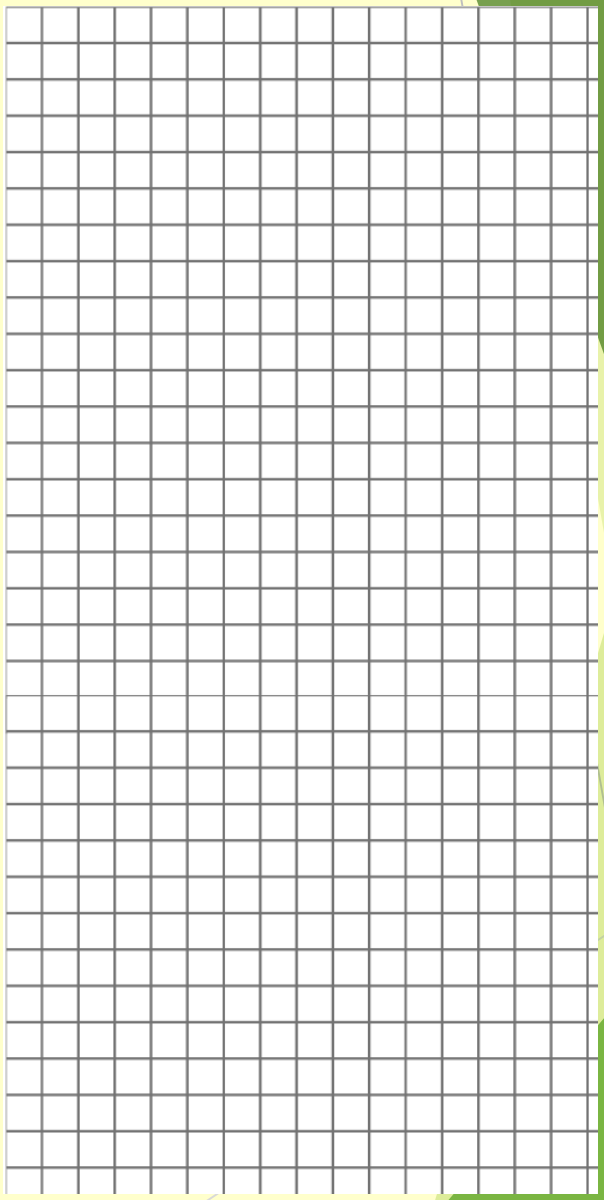
It descends 150 m by 3 pm.

It then ascends 25 m by 4pm.

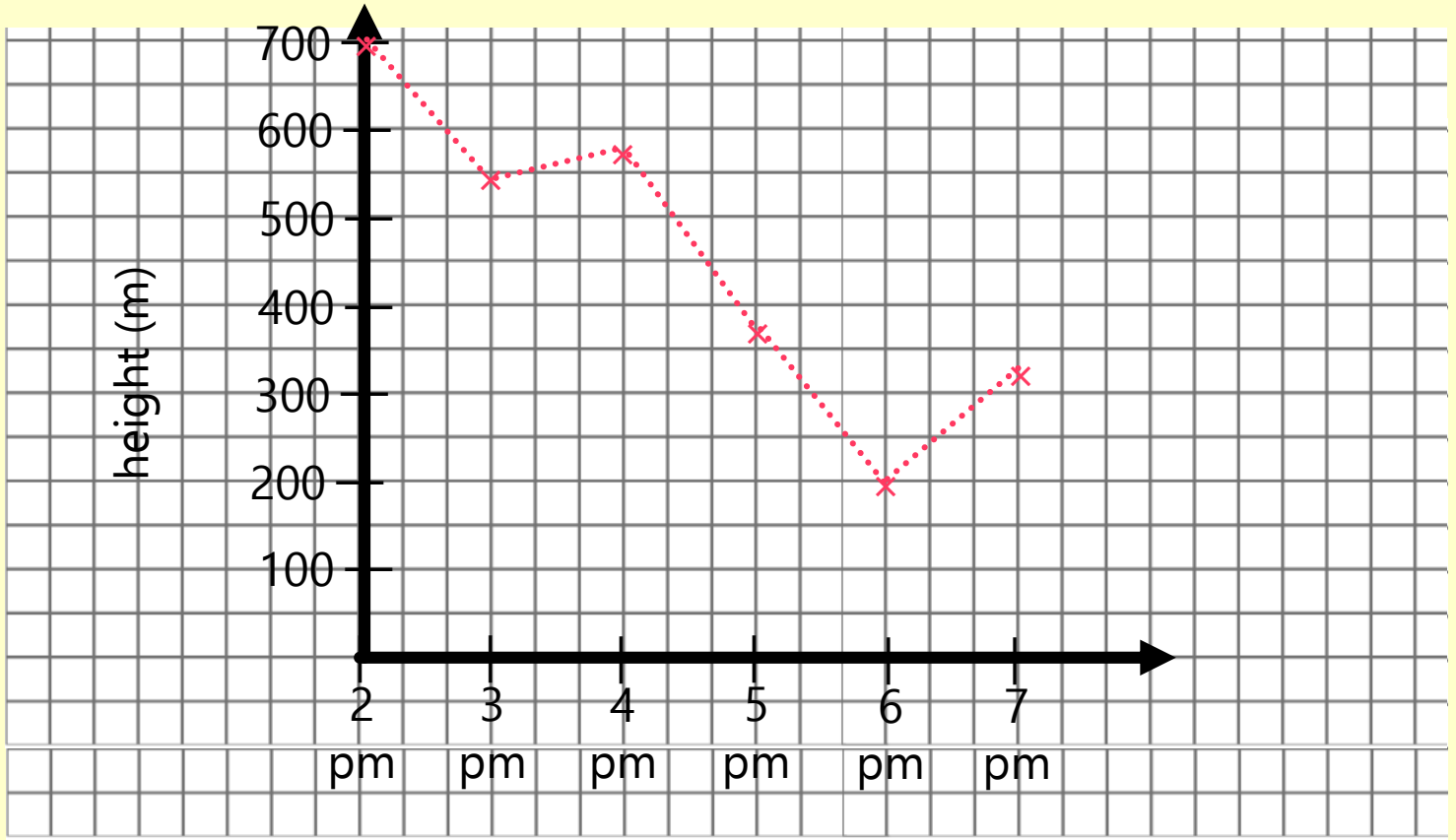
It is flying at 375 m at 5 pm.

It is flying at 200 m later an hour later.

It is flying 125 m higher at 7 pm than it was at 6 pm.



Reflective Doing - ANSWERS



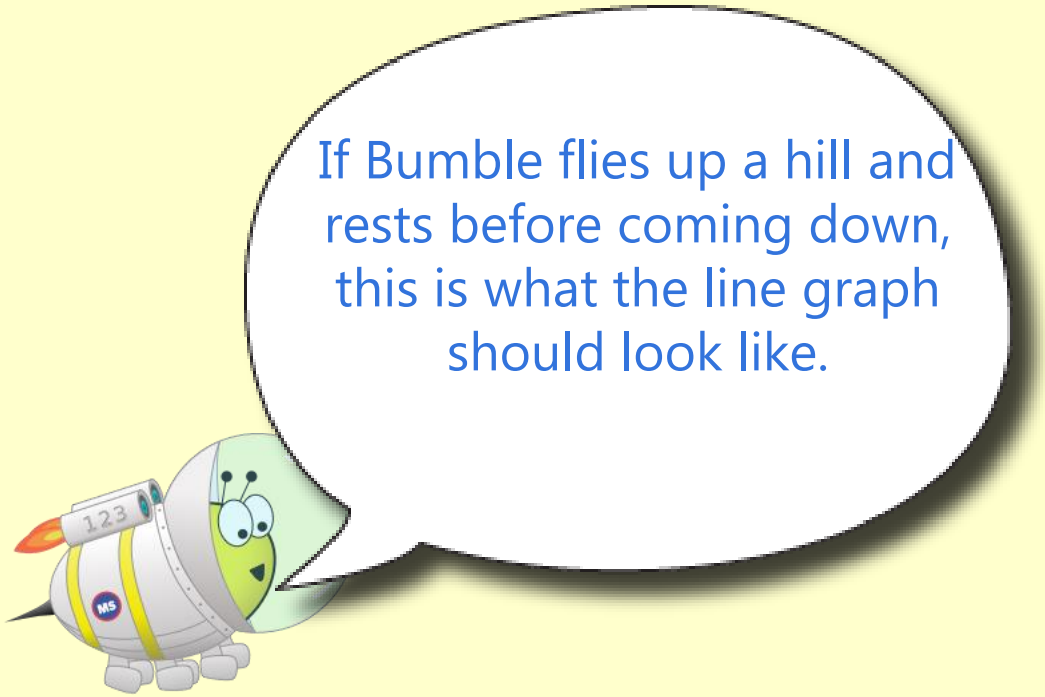
Choose your challenge

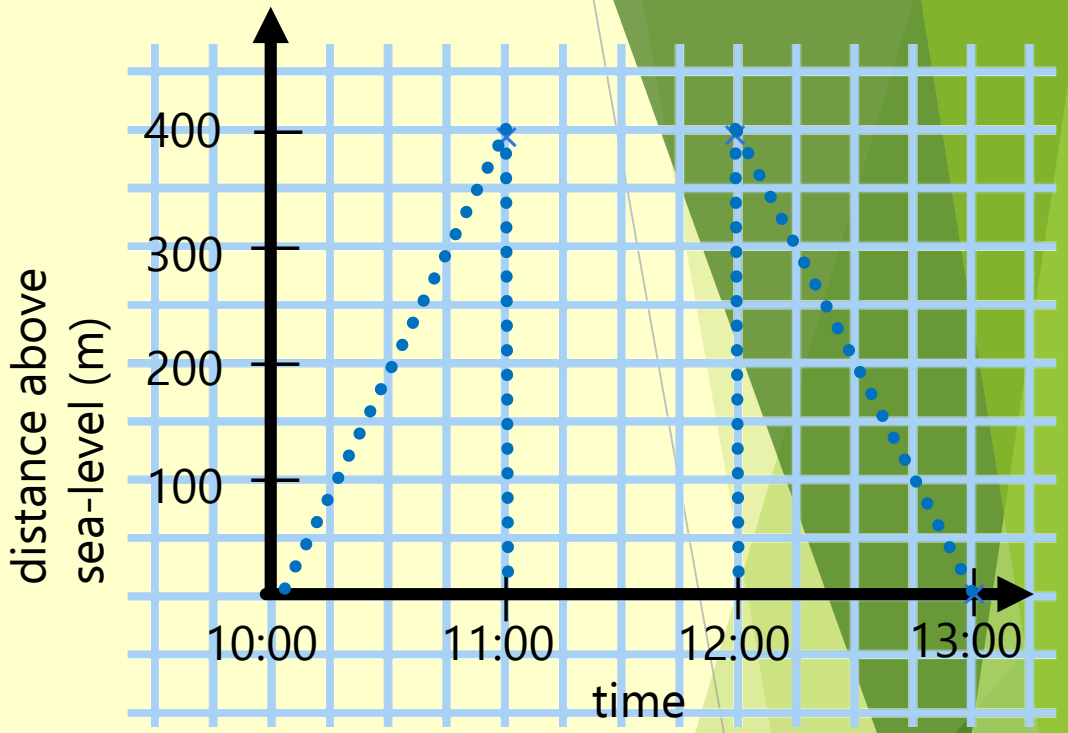
Challenges can be found on the document named ‘Maths Challenges Day 2’.

Choose an appropriate challenge OR work through green, orange and red.

Answers can be found at the bottom of the document.

Reflection Time





Do you agree?

Explain your answer.

I agree/disagree because...

Reflection Time - ANSWERS

Although the points have been plotted sensibly, when Bumble rests it doesn't mean Bumble is back at 0 m. So, there should be a flat line at the top (shown).

Statistics

Day 3

Starter

Complete the sentences below by crossing out the incorrect option each time.

a) The most / fewest visitors were at 17:00.

b) There were more visitors at 09:00 / 13:00 than at 16:00.

c) There were 1,000 / 2,000 more visitors at 12:00 than at 15:00.

Explain your choices

Starter - ANSWERS

Complete the sentences below by crossing out the incorrect option each time.

a) The ~~most~~ / fewest visitors were at 17:00.

b) There were more visitors at ~~09:00~~ / 13:00 than at 16:00.

c) There were 1,000 / ~~2,000~~ more visitors at 12:00 than at 15:00.

Explain your choices

Key Vocabulary

Date: Day 3

LO: To be able to solve line graph problems.

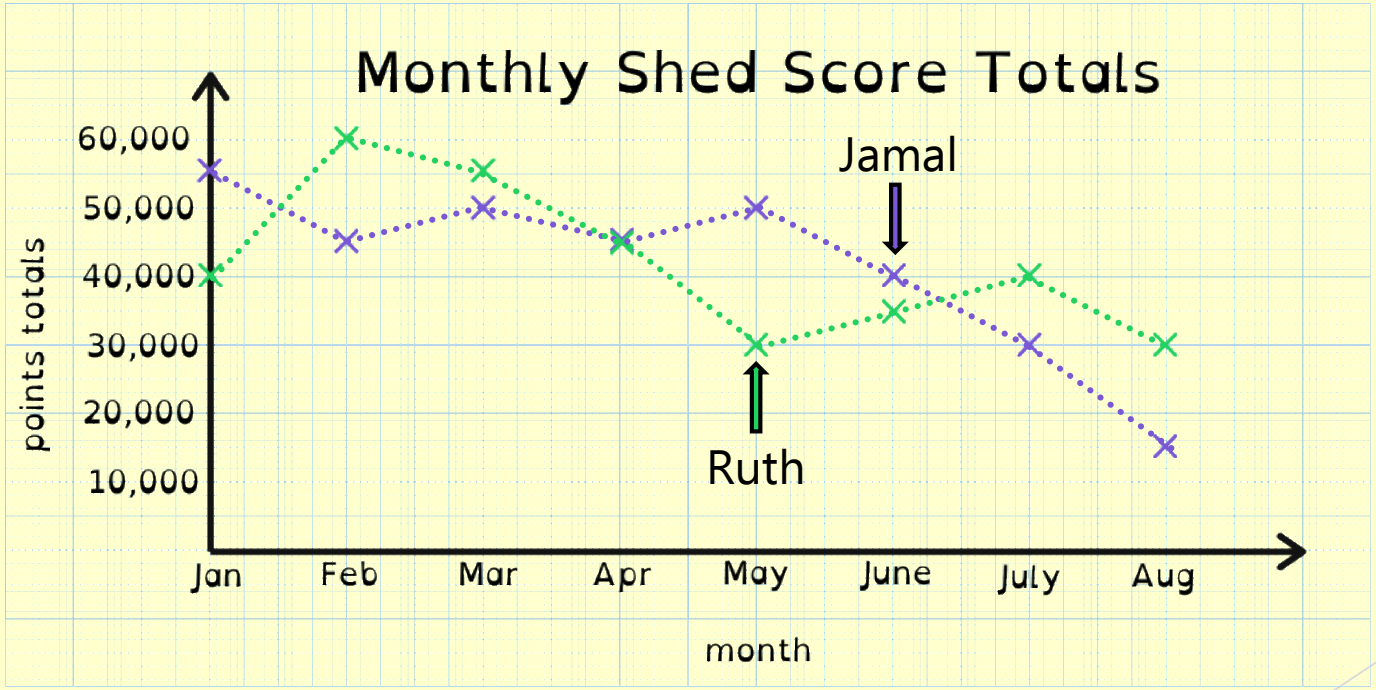
Success Criteria

I can use my knowledge of using scales to read, interpret and draw line graphs to solve line graph problems.

I can explain my reasoning.

Descriptive Doing

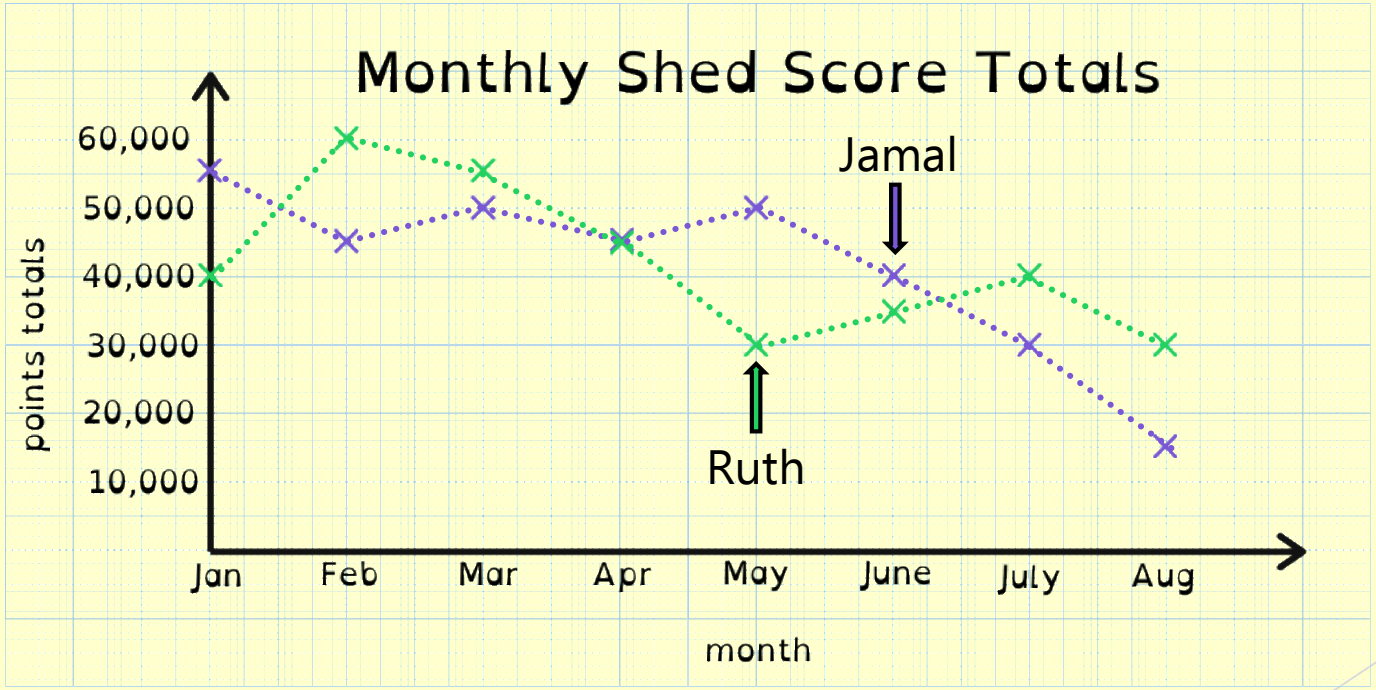
Use the line graph to help you complete the sentence below:



Ruth has a total Shed Score of _____ points in May.

Descriptive Doing - ANSWERS

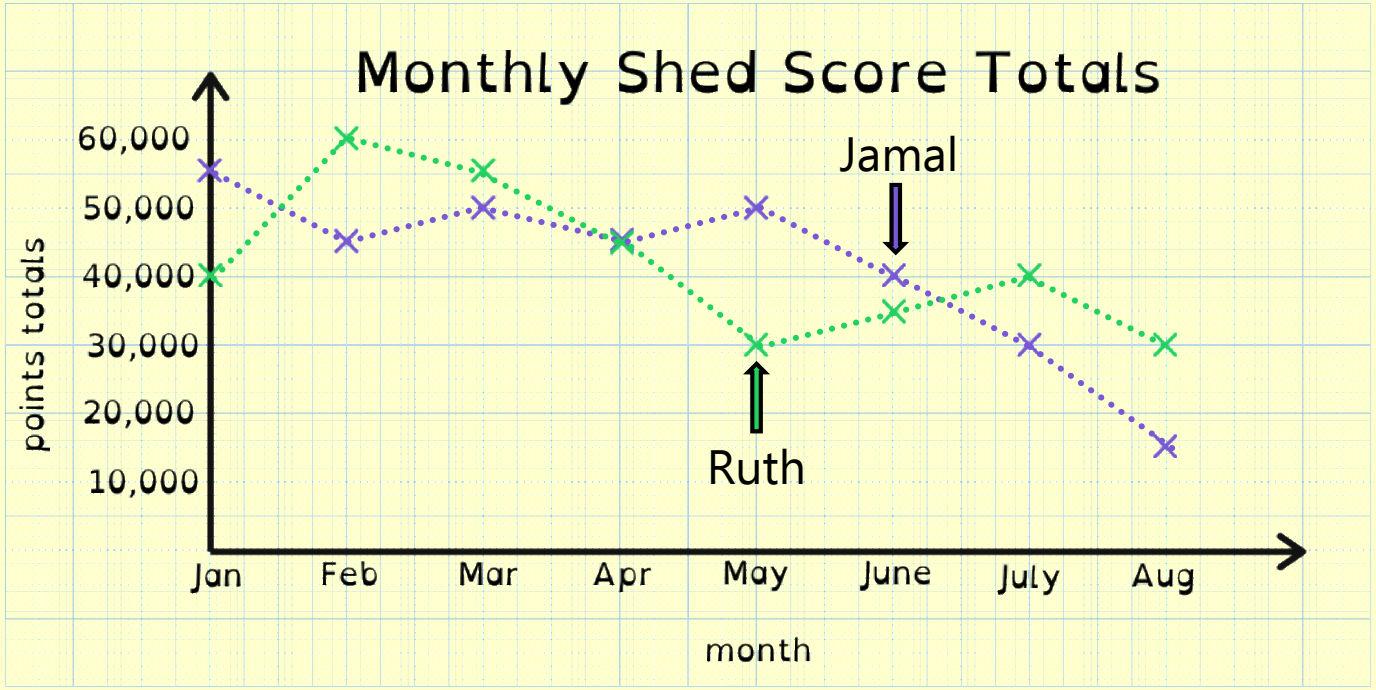
Use the line graph to help you complete the sentence below:



Ruth has a total Shed Score of **30,000** points in May.

Descriptive Doing

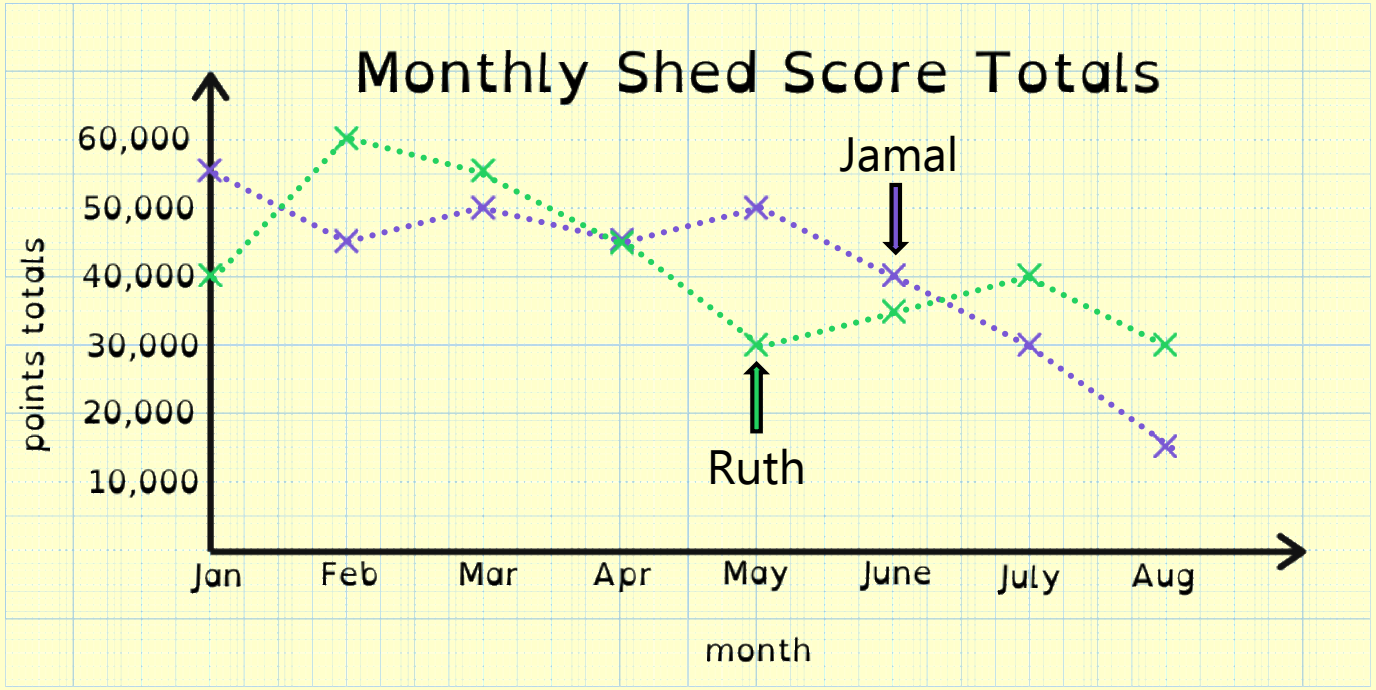
Use the line graph to help you complete the sentence below:



Jamal has a total Shed Score of _____ points in June.

Descriptive Doing - ANSWERS

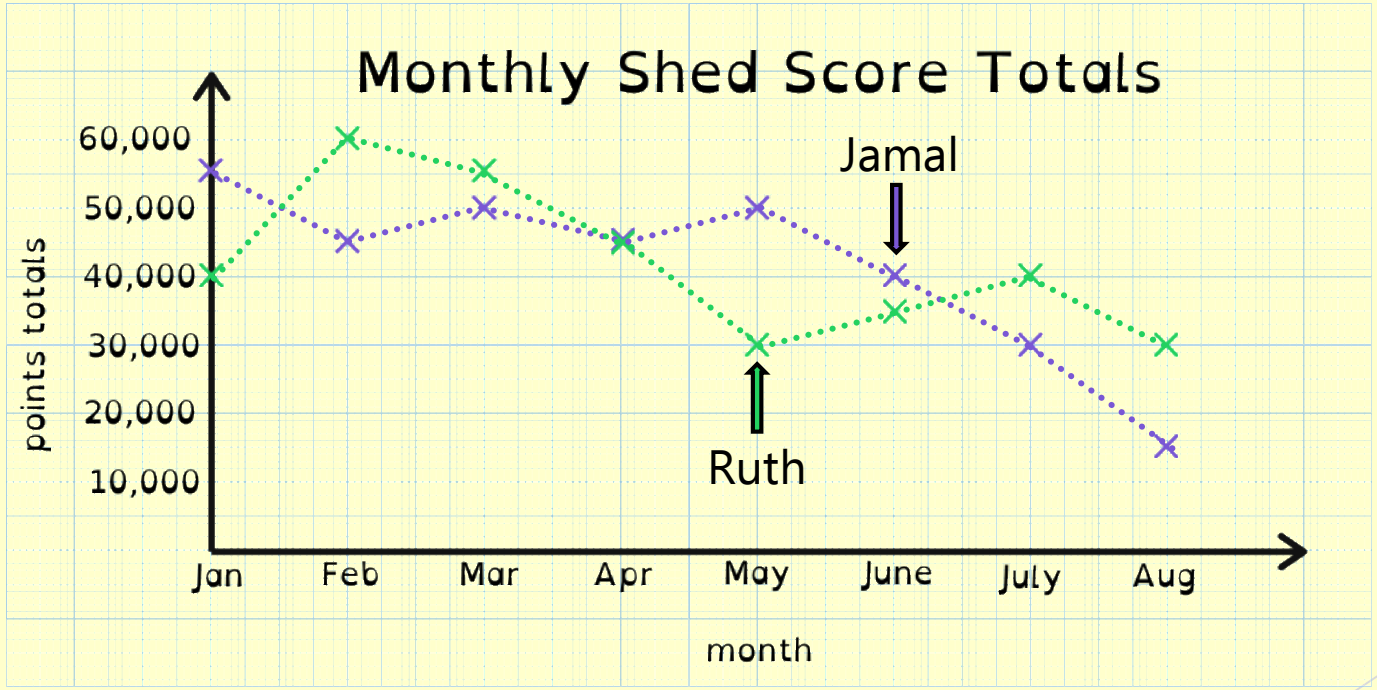
Use the line graph to help you complete the sentence below:



Jamal has a total Shed Score of **40,000** points in June.

Descriptive Doing

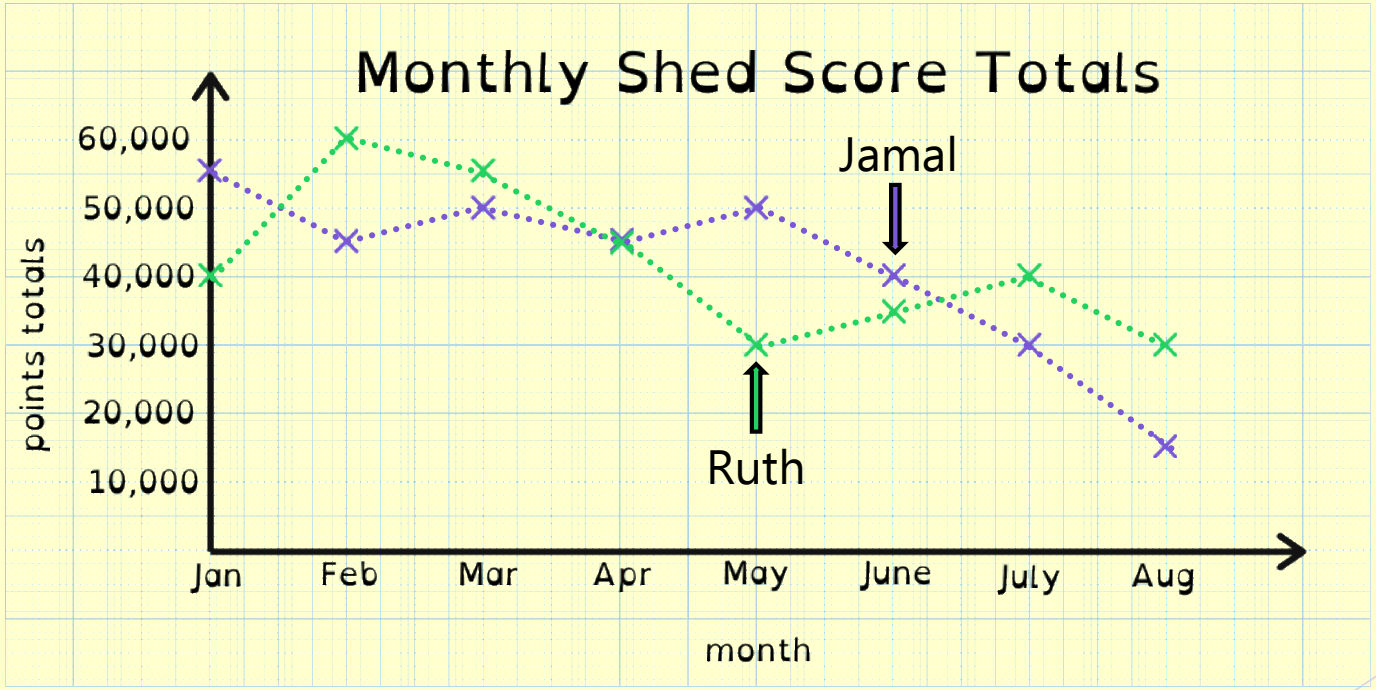
Use the line graph to help you complete the sentence below:



Their combined Shed Score in July is _____ points.

Descriptive Doing - ANSWERS

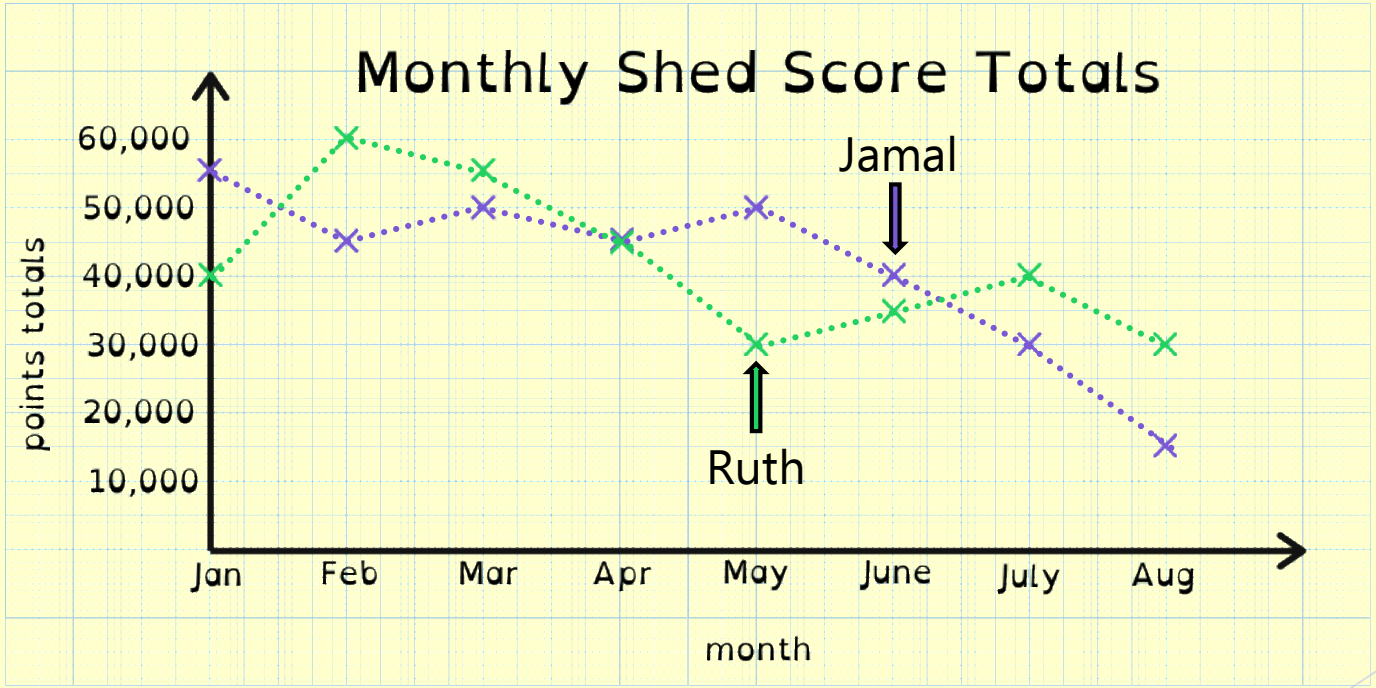
Use the line graph to help you complete the sentence below:



Their combined Shed Score in July is **70,000** points.

Descriptive Doing

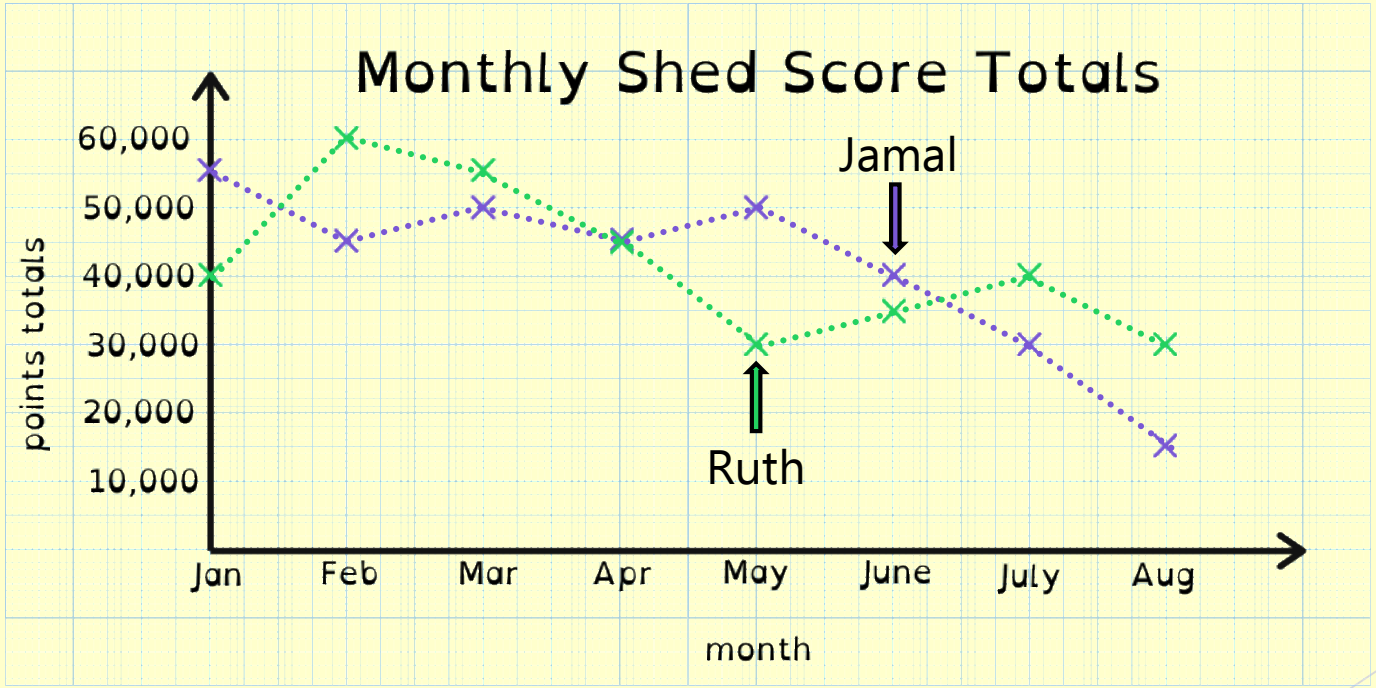
Use the line graph to help you complete the sentence below:



Ruth scored 35,000 points in the month of _____.

Descriptive Doing - ANSWERS

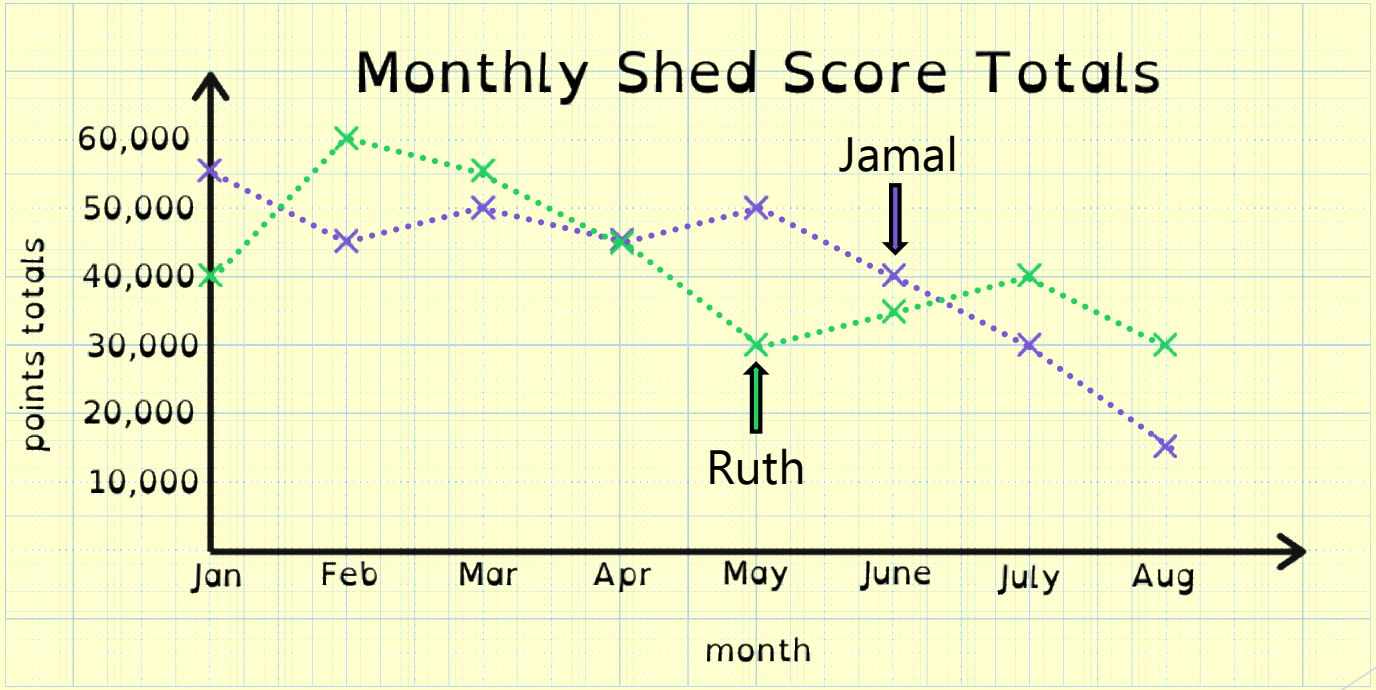
Use the line graph to help you complete the sentence below:



Ruth scored 35,000 points in the month of **June**.

Descriptive Doing

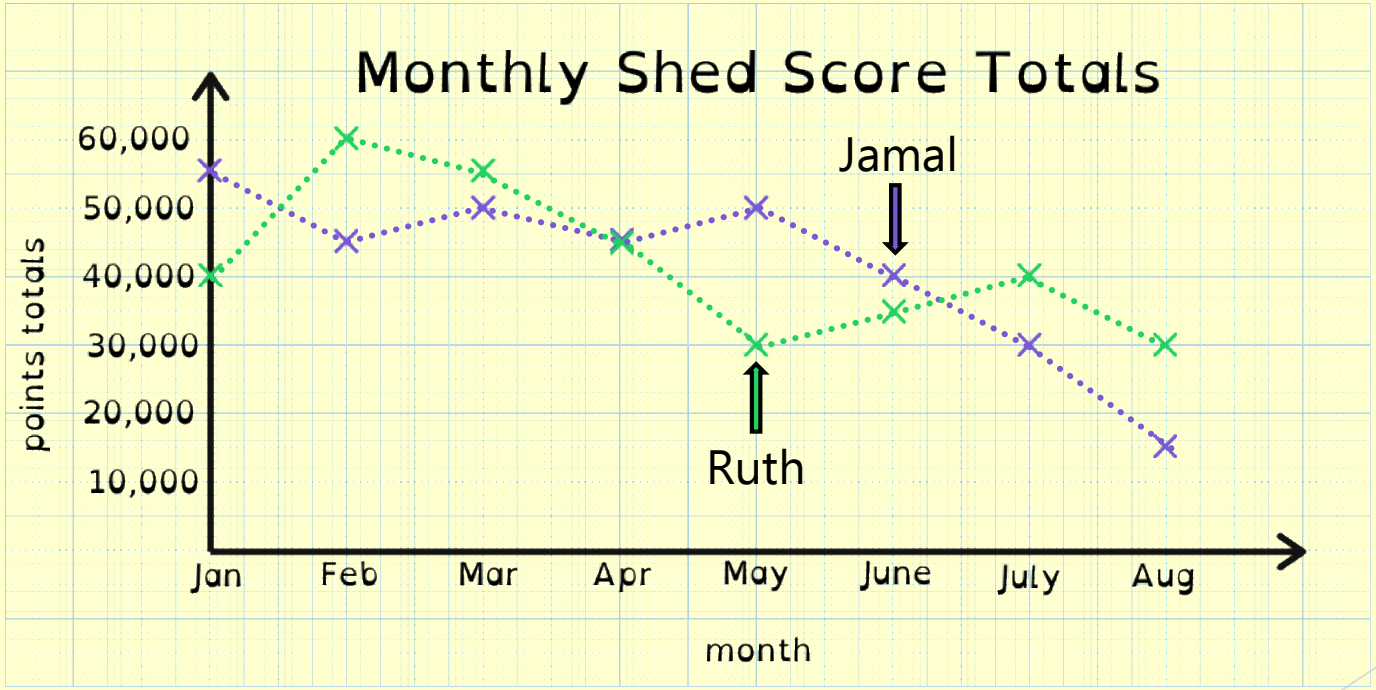
Use the line graph to help you complete the sentence below:



Ruth and Jamal have the biggest points difference in _____.

Descriptive Doing - ANSWERS

Use the line graph to help you complete the sentence below:



Ruth and Jamal have the biggest points difference in **May**.

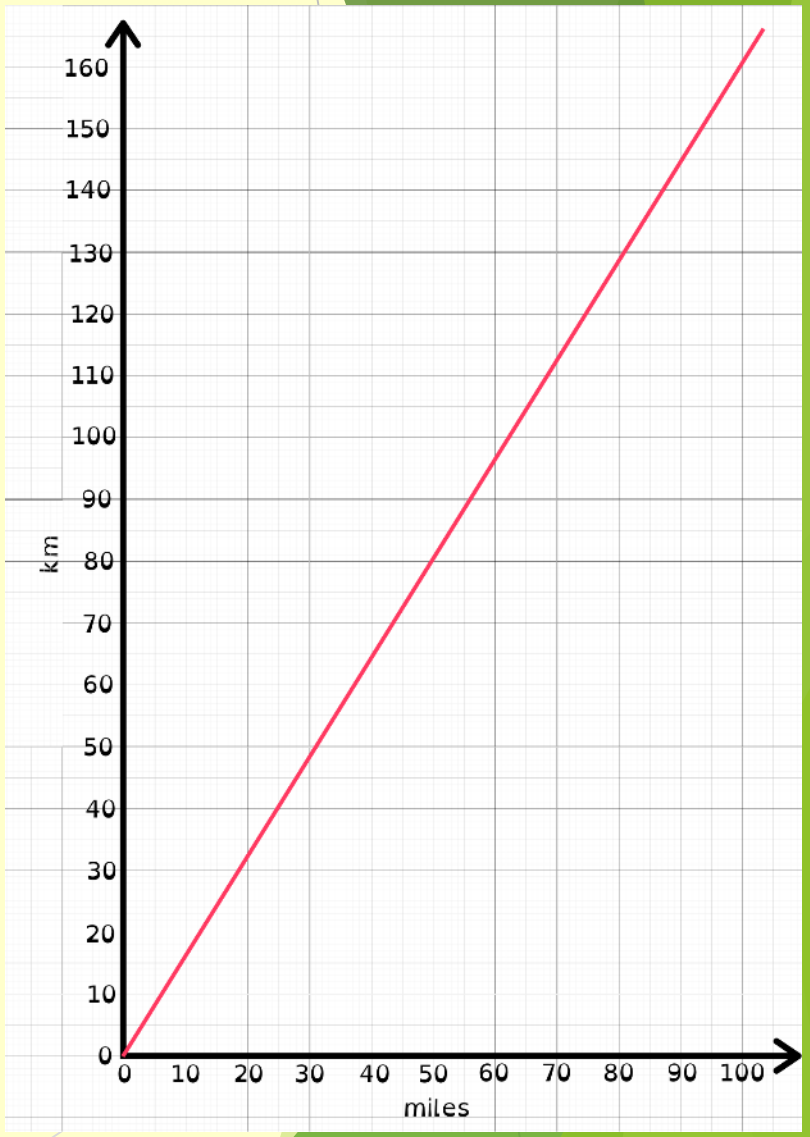
Reflective Doing

Ruth says, “To convert 360 miles to km, I am going to find out what 90 miles is in km and multiply the result by 4.”

Jamal says, “To convert 360 miles to km, I am going to find out what 60 miles is in km and multiply the result by 6.”

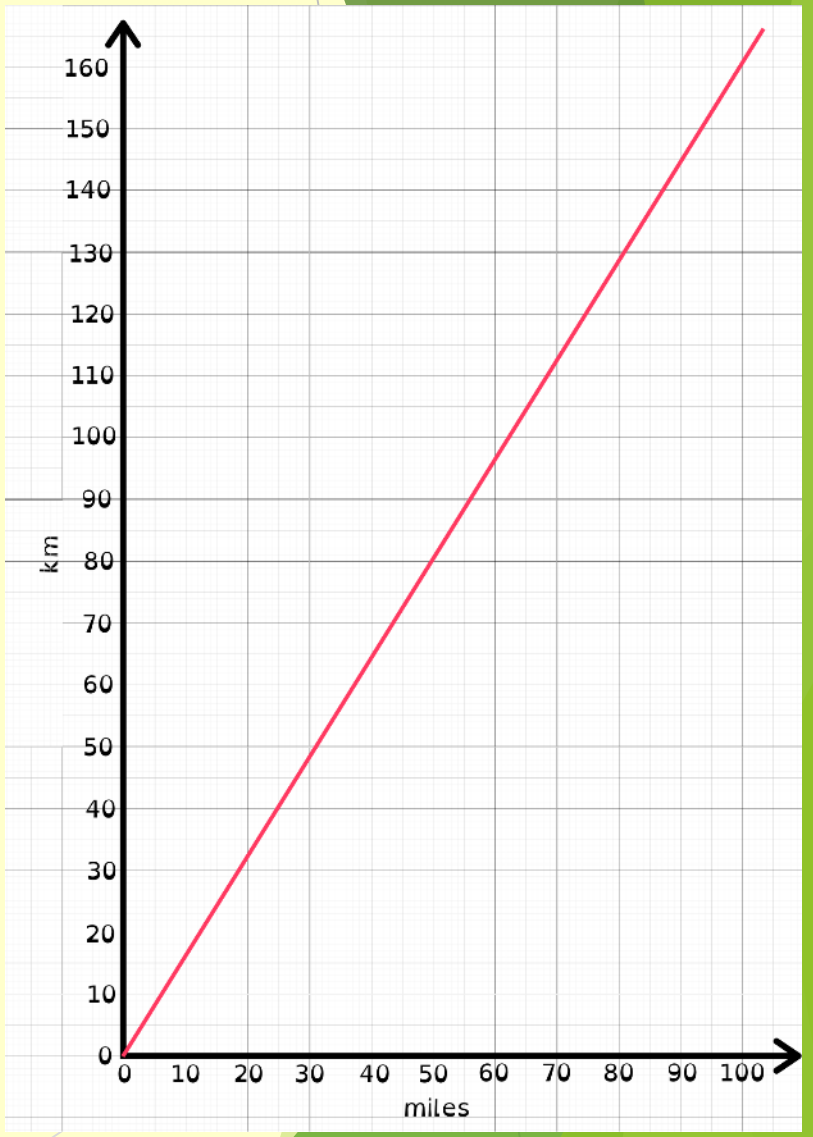
Whose strategy will work?

Explain your answer.



Reflective Doing - ANSWERS

Both strategies will work. Ruth will find that 90 miles = 144 km, so 360 miles = 144 x 4 = 576 km.
Jamal will find that 60 miles = 96 km, and 96 x 6 = 576 km.

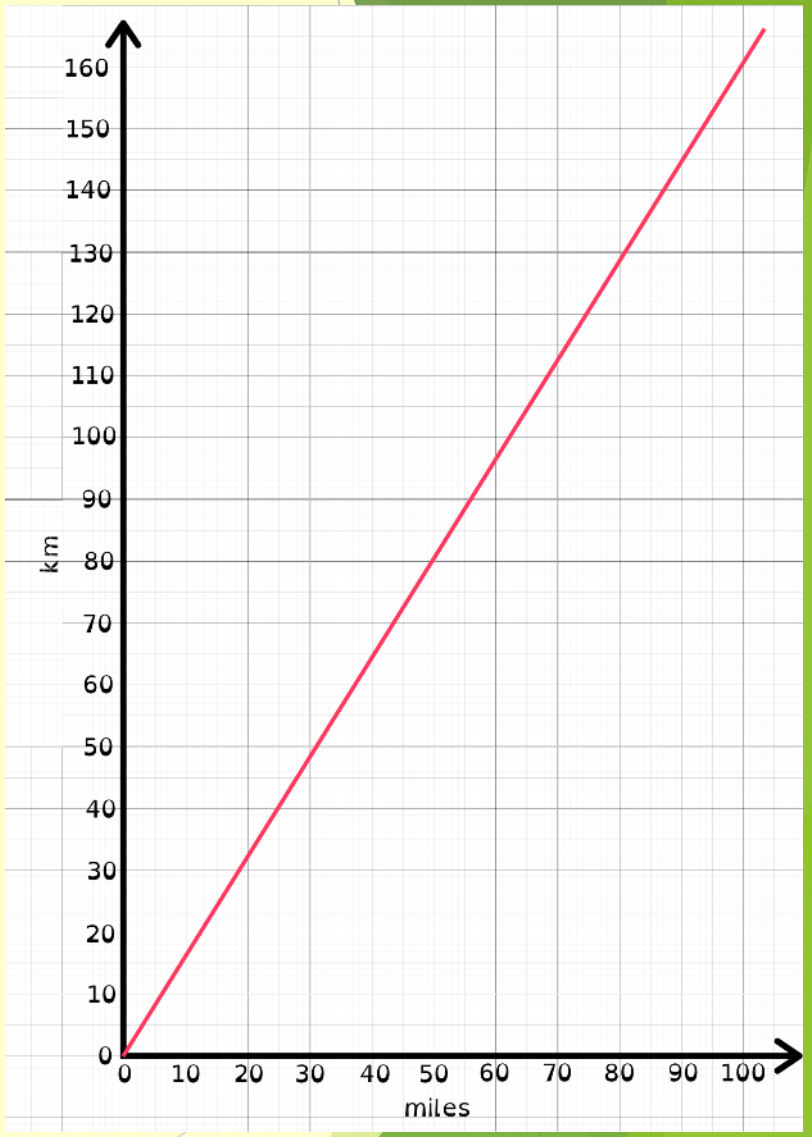


Reflective Doing

A choir from Boston, Massachusetts have a concert to play in Ottawa, Canada.

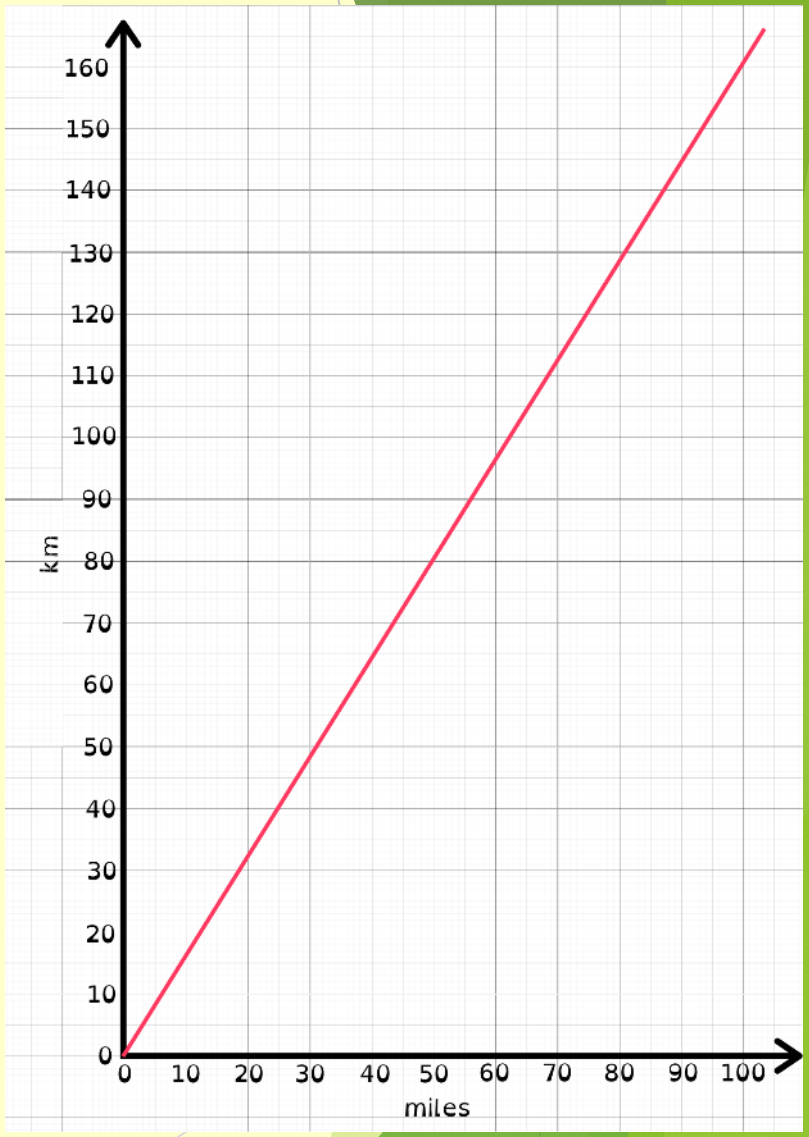
It is 300 miles from Boston to the Canadian border.
It is 120 km from the Canadian border to Ottawa.

How long is their journey in total?
Give your answer in both miles and km.



Reflective Doing - ANSWERS

Their journey is 480 km + 120 km = 600 km.
In miles, it is 300 miles + 75 miles = 375 miles.



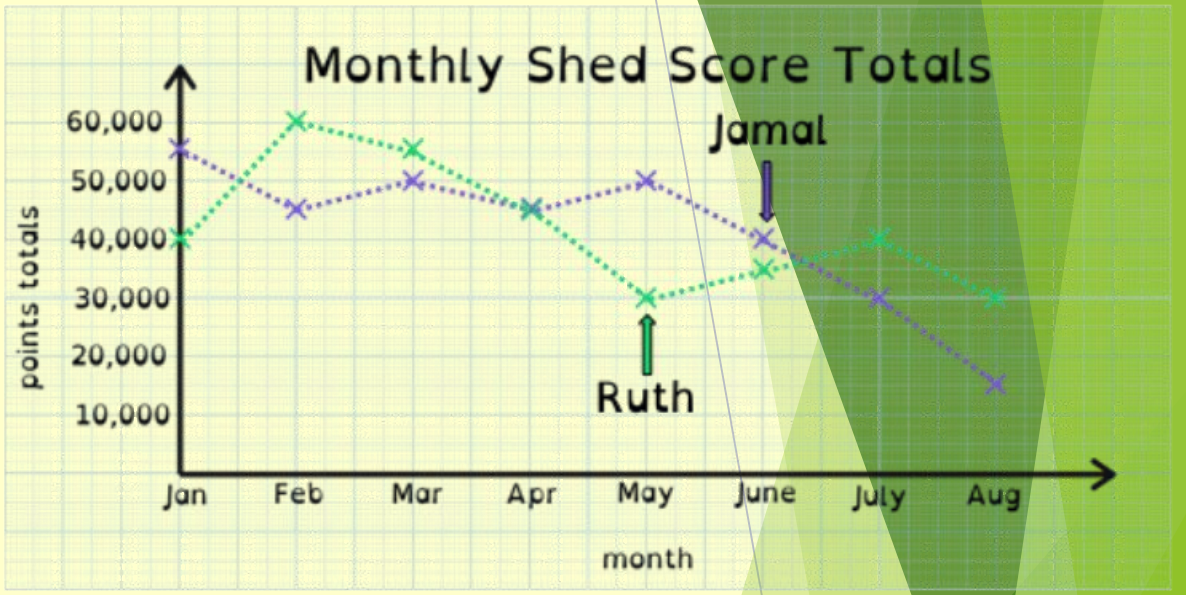
Choose your challenge

Challenges can be found on the document named ‘Maths Challenges Day 3’.

Choose an appropriate challenge OR work through green, orange and red.

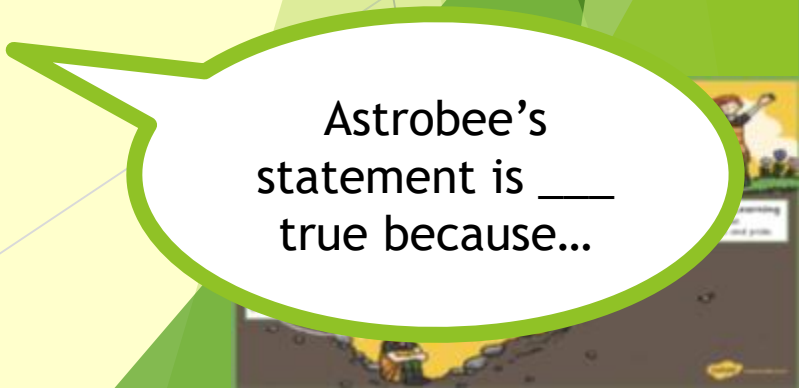
Answers can be found at the bottom of the document.

Reflection Time



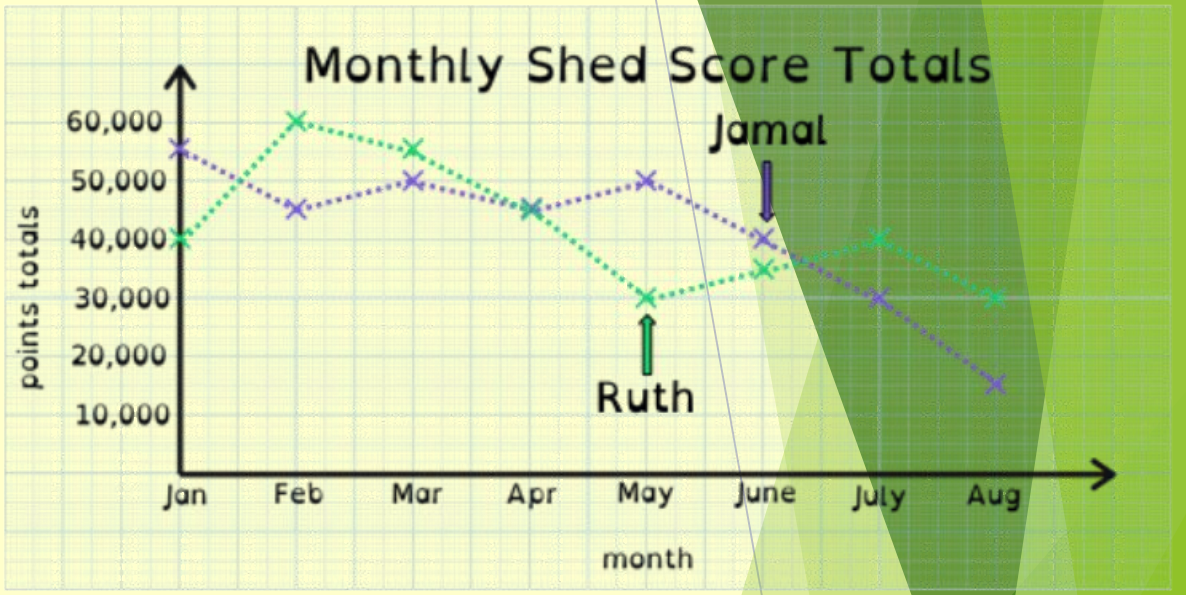
Is Astrobee's statement always, sometimes or never true?

Explain your answer.



Reflection Time - ANSWERS

Astrobee's statement is only sometimes true. For example, Jamal has a higher score in January as 55,000 is more than 40,000. However, they both have the same score in April and Ruth has a higher score in July (40,000 > 30,000).

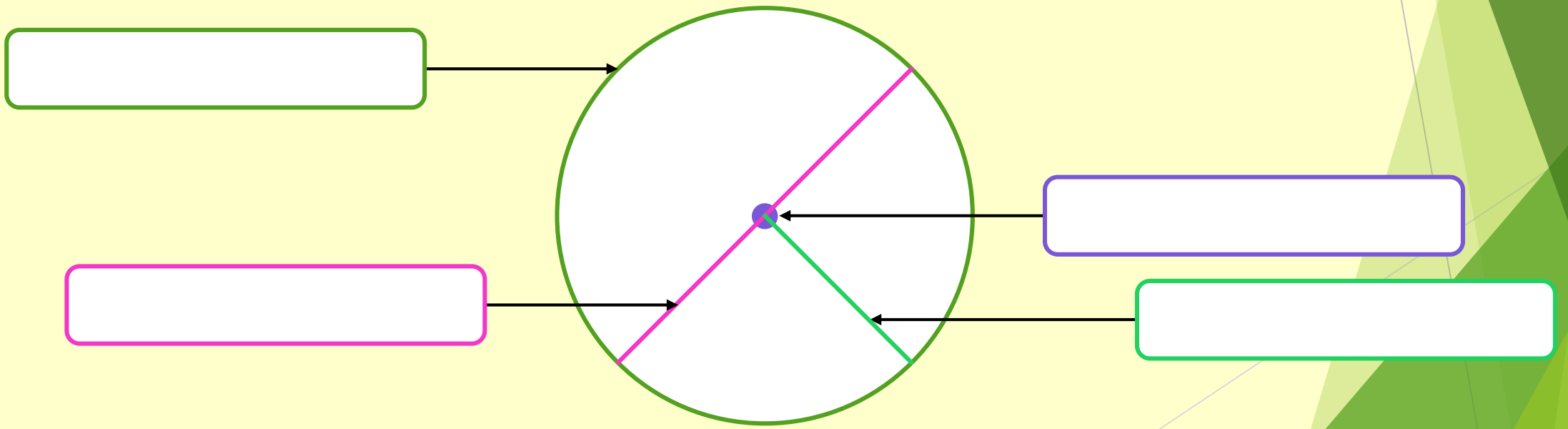


Statistics

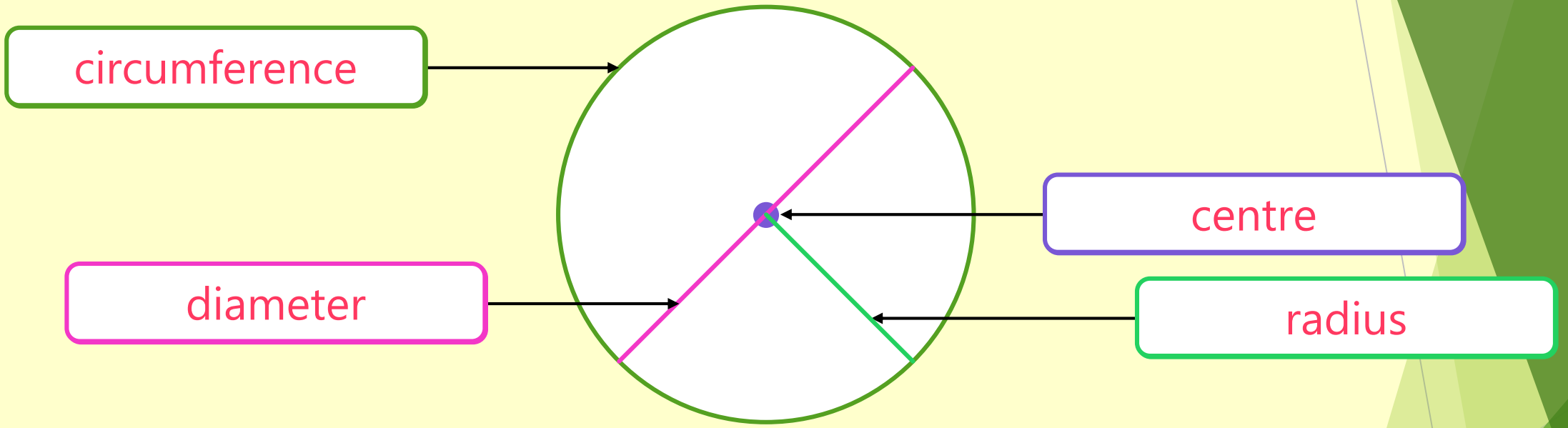
Day 4

Starter

Use a dictionary or online dictionary to help you name the parts of the circle below. It will be useful for you to write the definitions in your book.
Use each of the following terms once: centre, circumference, diameter and radius.



Starter - ANSWERS



Key Vocabulary

Date: Day 4

LO: To be able to annotate and name parts of a circle.

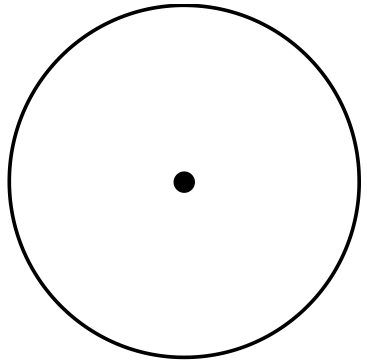
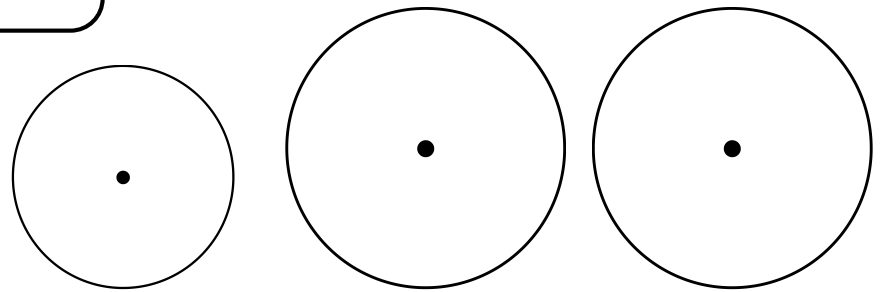
Success Criteria

I can use the terms centre, circumference, diameter and radius to annotate and solve problems involving circles.

I can explain my reasoning.

Descriptive Doing

Complete the Frayer Models for diameter and radius.

definition:	characteristics:
example: 	non-examples: 

diameter/radius

Descriptive Doing - ANSWERS

diameter

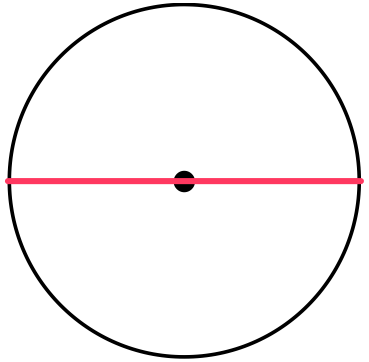
definition:

The diameter of a circle is the length of a straight line that can be drawn across it, passing through the middle of it.

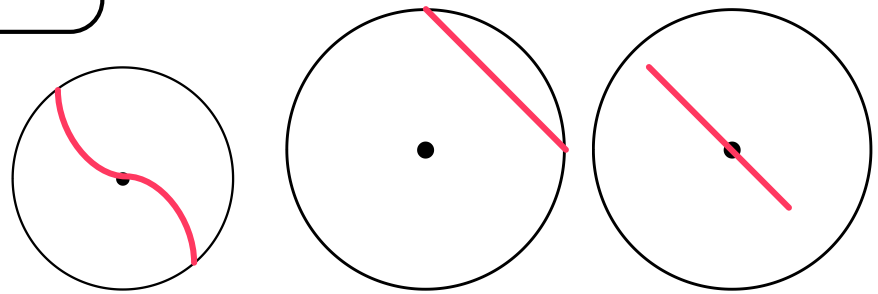
characteristics:

- straight line;
- starts at one side of the edge, passes through to the other outer edge (circumference)

example:



non-examples:



Descriptive Doing - ANSWERS

radius

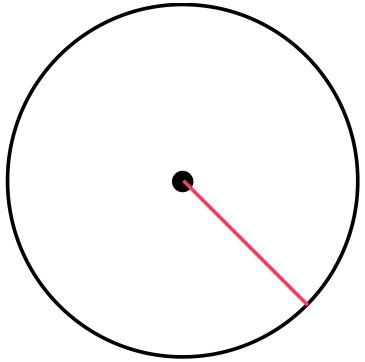
definition:

The radius of a circle is the distance from its centre to its circumference (outside edge).

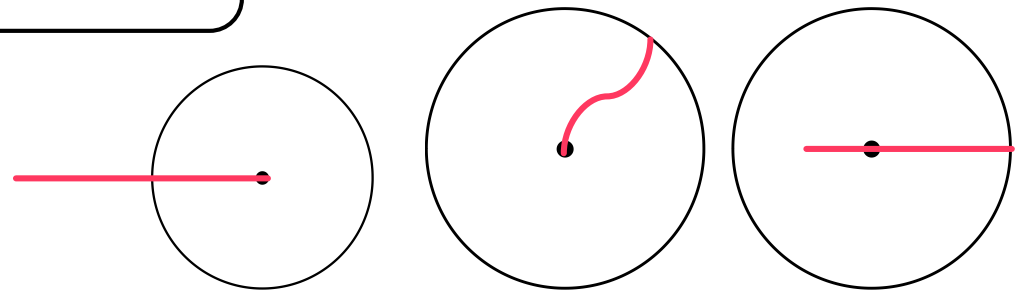
characteristics:

- straight line;
- starts at centre, ends at circumference

example:

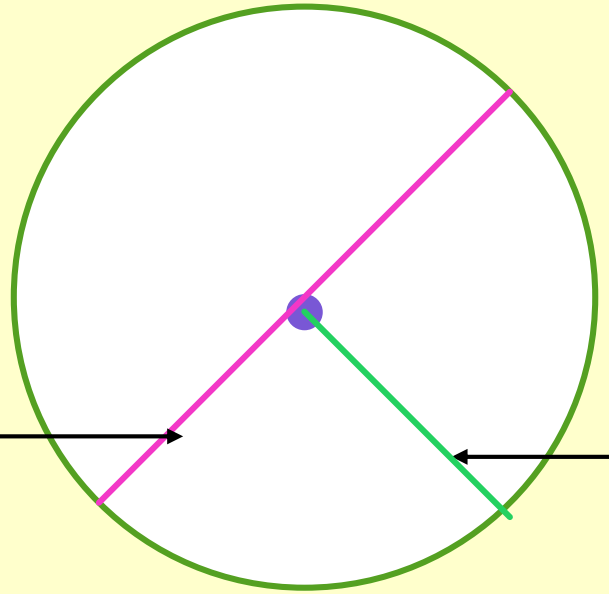


non-examples:



Descriptive Teaching

Use the facts provided to state the diameter and radius of the circle below.



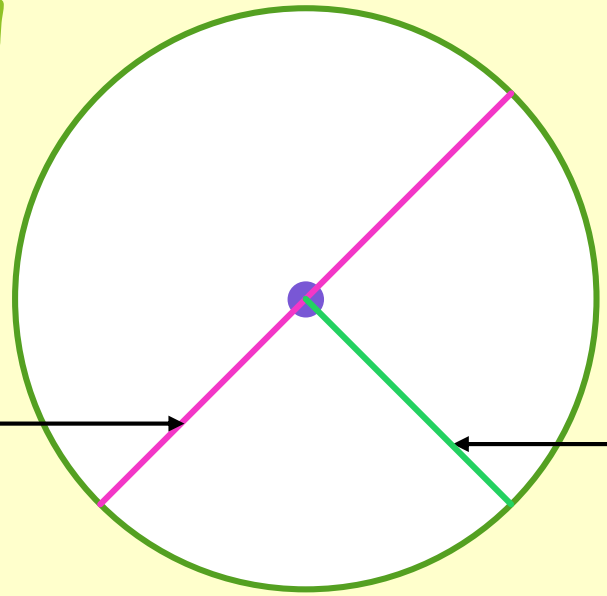
diameter: **4 m**

radius: 2 m

If the radius is 2m (half of the circle, the diameter must be 4m). **If the given fact is the radius, you need to double it to find the diameter. If the given fact is the diameter, you need to halve it to find the radius.**

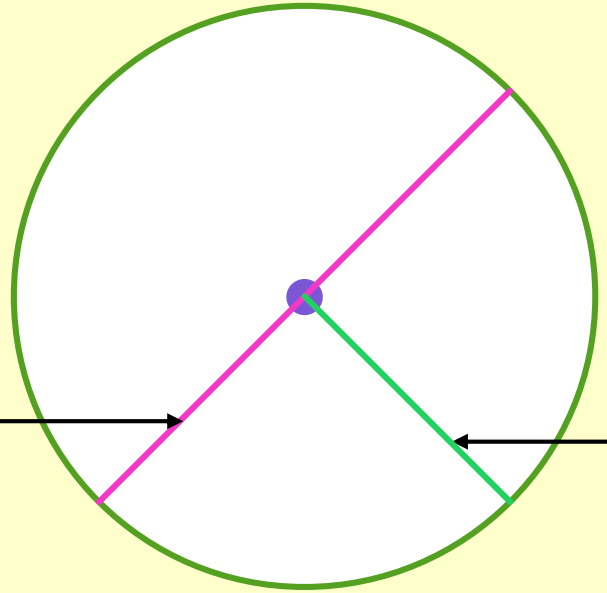
Descriptive Doing

diameter:



radius: 10 km

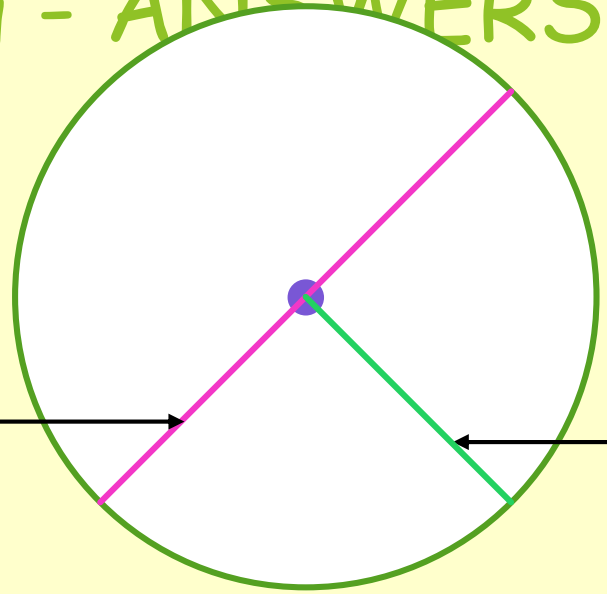
diameter: 10 cm



radius:

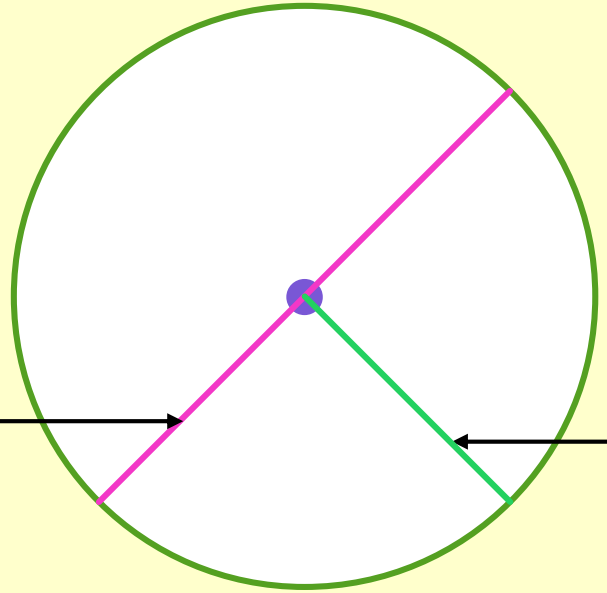
Descriptive Doing - ANSWERS

diameter: **20 km**



radius: 10 km

diameter: 10 cm



radius: **5 cm**

Descriptive Doing

Complete the table below:

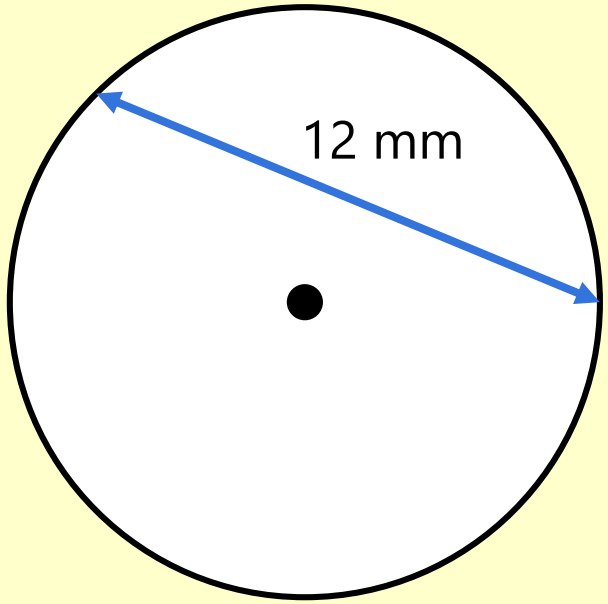
diameter	radius
	5 mm
	12 mm
36 km	
9 m	
	2.5 km
11 cm	
	12.1 mm
36.8 km	

Descriptive Doing - ANSWERS

diameter	radius
10 mm	5 mm
24 cm	12 mm
36 km	18 km
9 m	4.5 m
5 km	2.5 km
11 cm	5.5 cm
24.2 mm	12.1 mm
36.8 km	18.4 km

Reflective Doing

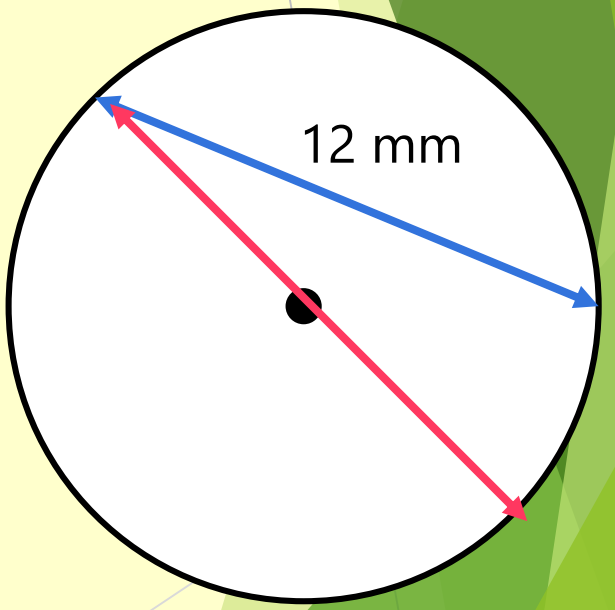
James says, “The circle’s diameter is 12 mm.”



Do you agree?
Explain your answer.

Reflective Doing - ANSWERS

No, I do not agree as the line does not pass through the centre.
So, as the blue line is shorter than the diameter, the diameter will have a measurement greater than 12 mm. (Red line shows diameter correctly.)



Reflective Doing

Are the following statements true or false?

a) A circumference is a straight line.

b) A radius line passes through the centre of a circle.

c) A diameter is double the value of the radius.

Explain your answers.

Reflective Doing - ANSWERS

a) A circumference is a straight line.
False – it is a curved line that represents the outer edge of a circle.

b) A radius line passes through the centre of a circle.
False – it starts at the circumference and ends at the centre (or vice versa).

c) A diameter is double the value of the radius.
True.

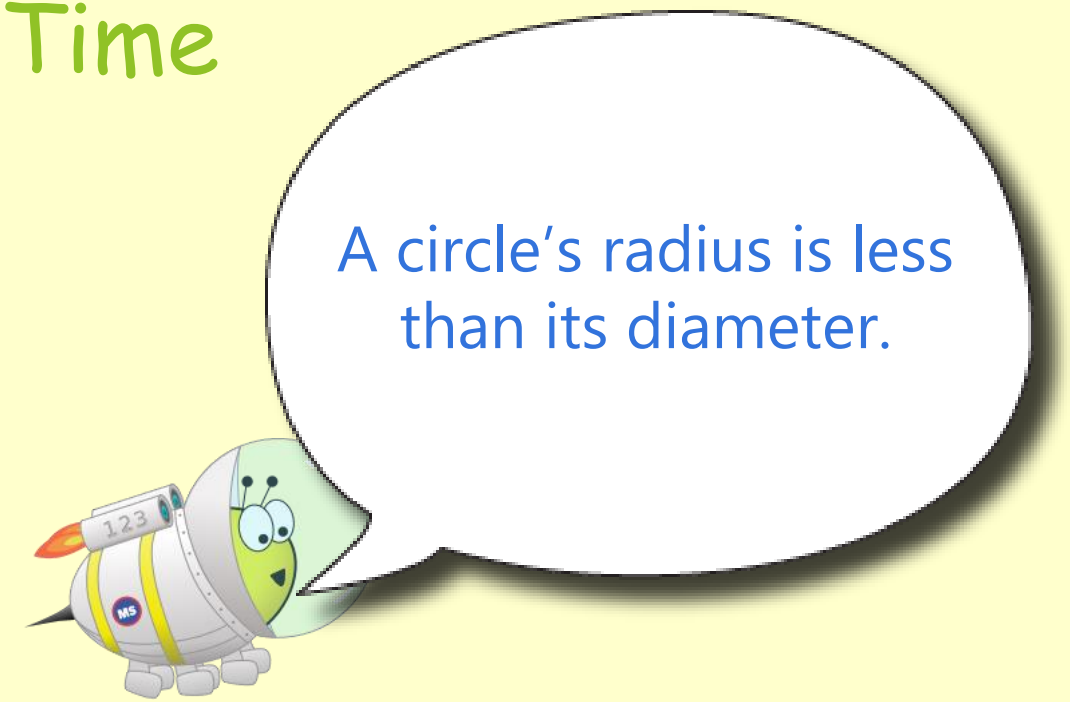
Choose your challenge

Challenges can be found on the document named ‘Maths Challenges Day 4’.

Choose an appropriate challenge OR work through green, orange and red.

Answers can be found at the bottom of the document.

Reflection Time



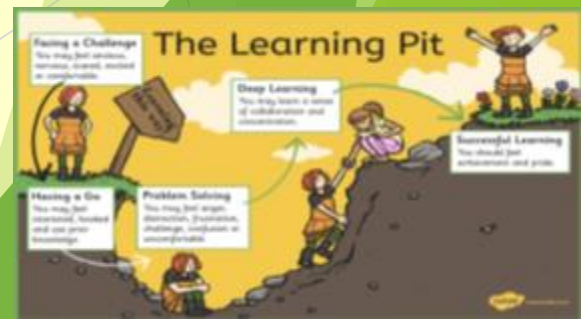
Astrobee's statement is ___ true because…

Is Astrobee's statement always, sometimes or never true?

Provide examples to help explain your answer.

Reflection Time - ANSWERS

Astrobee's statement is always true. For example, a circle with a radius of 5 cm has a diameter of 10 cm and a circle with a diameter of 120 km has a radius of 60 km. A radius is always half of a diameter, so always less than a diameter!

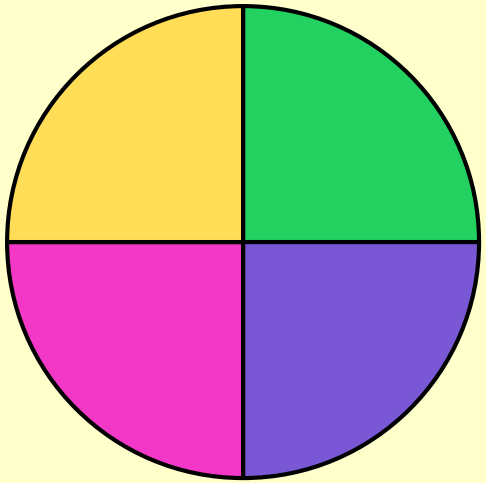


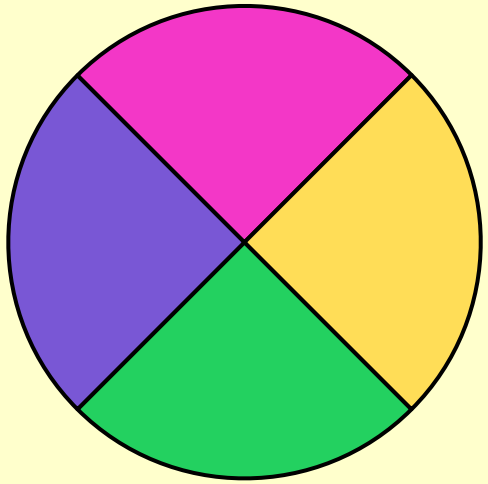
Statistics

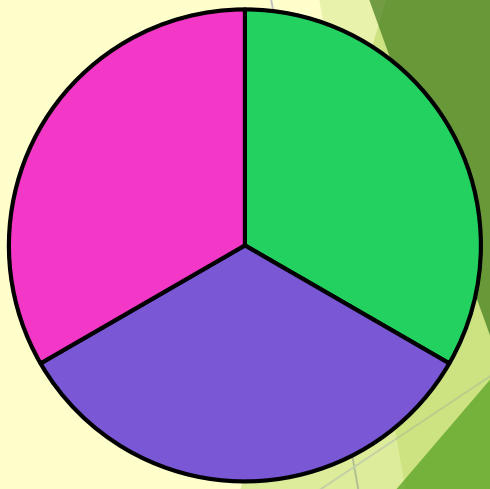
Day 5

Starter

Which one doesn't belong?

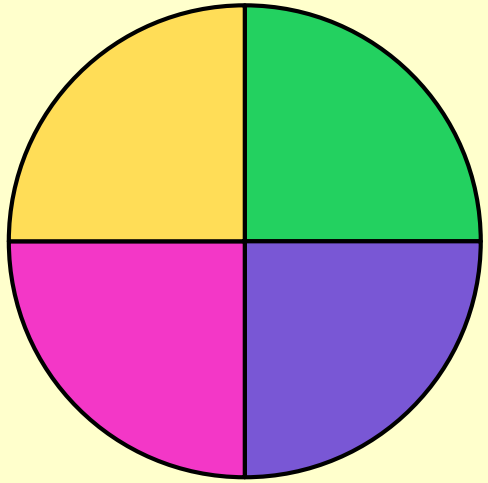


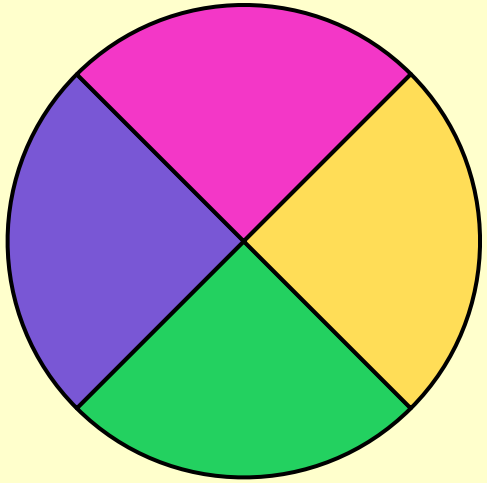


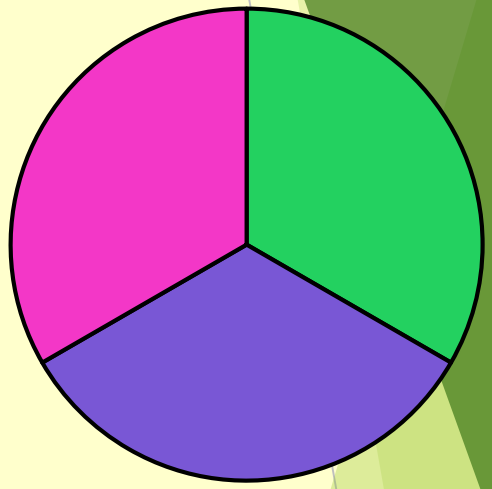


Explain your answer.

Starter - ANSWERS







The right-hand pie chart doesn't belong as it only has three parts. Whereas, the left-hand and middle pie charts are both split into four equal parts.

Key Vocabulary

Date: Day 5

LO: To be able to read and interpret pie charts.

Success Criteria

I can use my knowledge of circles to read and interpret pie charts.

I can explain my reasoning.

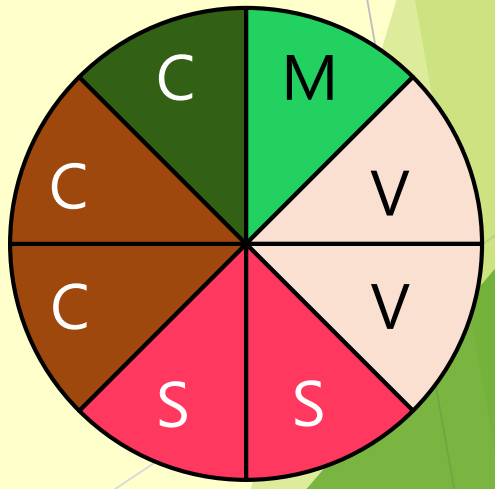
Descriptive Doing

Referring to the pie chart, which shows data collected from interviewing 24 people about their preferred ice cream selection (C = chocolate, M = mint, S = strawberry and V = vanilla), complete the sentences below.

___ people chose mint.

___ people chose vanilla.

___ people chose chocolate.



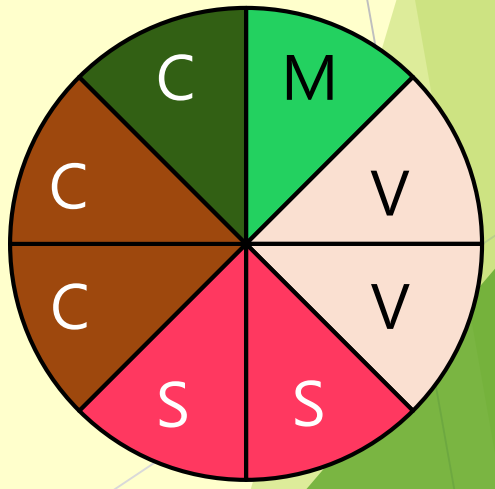
Descriptive Doing - ANSWERS

Referring to the pie chart, which shows data collected from interviewing 24 people about their preferred ice cream selection (C = chocolate, M = mint, S = strawberry and V = vanilla), complete the sentences below.

3 people chose mint.

6 people chose vanilla.

9 people chose chocolate.



Descriptive Doing

A survey by bikingshed.com asked how many bicycles people have at home.
1,000 people responded.

a) How many people have just one bike at home?

b) How many people have more than two bikes at home?

c) What fraction of people have two bikes or fewer at home?

Descriptive Doing - ANSWERS

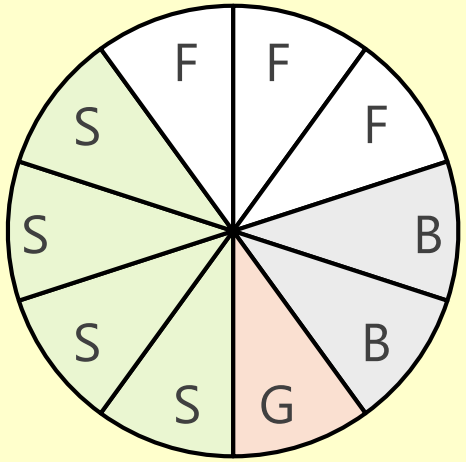
a) How many people have just one bike at home?
100 people have one bike at home.

b) How many people have more than two bikes at home?
700 people have one bike at home.

c) What fraction of people have two bikes or fewer at home?
Three tenths of the respondents have one or two bikes at home.

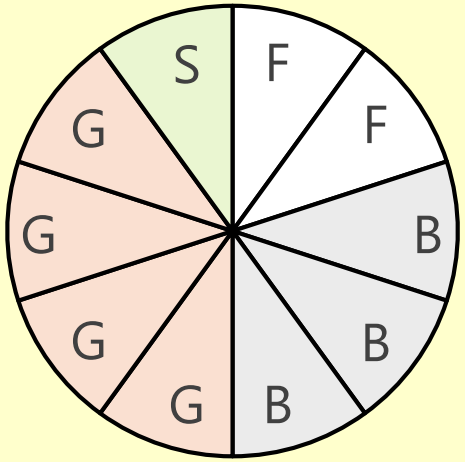
Reflective Doing

Children from two schools were asked, “What is your preferred sporting activity?”



Miller Academy
240 students

B = basketball
F = football
G = gymnastics
S = swimming



Forest School
530 students

James says, “More people chose football at Miller Academy as more parts have been selected for football in their chart than in Forest School’s pie chart.”
Do you agree? Explain your answer.

Reflective Doing - ANSWERS

No, I do not agree. Although three tenths of students at Miller Academy chose football, each part represents 24 students. Each part in Forest School's chart represents 53 students. Therefore, 24 x 3 = 72, which is less than 53 x 2 = 106 students.

Reflective Doing

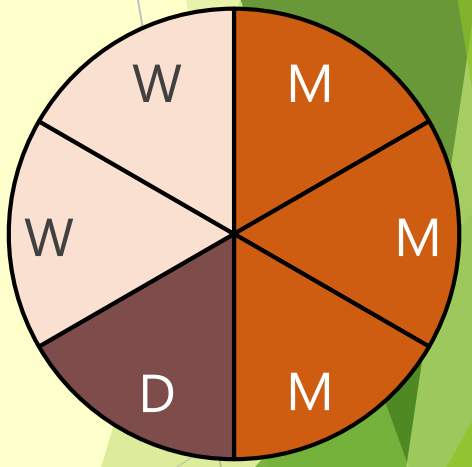
A box contains a mixed assortment of dark, milk and white chocolates.
The pie chart represents each type of chocolate's proportion of the box.

a) If there are 70 white chocolates in the box, How many chocolates are there in total?

b) How many more milk chocolates are there than dark chocolates in the box?

c) Copy and complete the sentences below:
There are _____ times as many milk chocolates as dark chocolates.
There are _____ as many dark chocolates as white chocolates in the box.

D = dark
M = milk
W = white



Reflective Doing - ANSWERS

a) If there are 70 white chocolates in the box, How many chocolates are there in total?
There are 210 chocolates in the box in total.

b) How many more milk chocolates are there than dark chocolates in the box?
There are 70 more milk than dark chocolates.

c) Copy and complete the sentences below:
There are **three** times as many milk chocolates as dark chocolates.
There are **half** as many dark chocolates as white chocolates in the box.

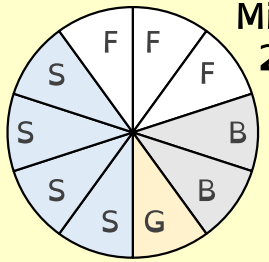
Choose your challenge

Challenges can be found on the document named ‘Maths Challenges Day 5’.

Choose an appropriate challenge OR work through green, orange and red.

Answers can be found at the bottom of the document.

Reflection Time



Miller Academy
240 students

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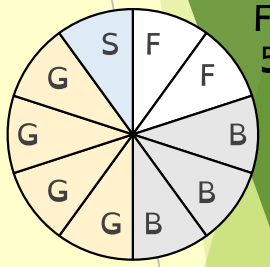
F = football
G = gymnastics
S = swimming



Forest School
530 students

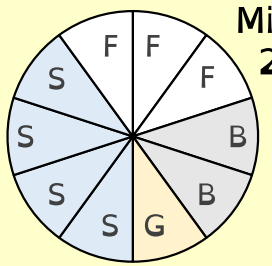
Do you agree?

Explain your answer.

I agree/disagree because...

Reflection Time - ANSWERS

No, I do not agree.
Astrobee has confused the two charts. Each part in the Forest School chart represents 53 students, so 159 of their students chose basketball.



Miller Academy
240 students

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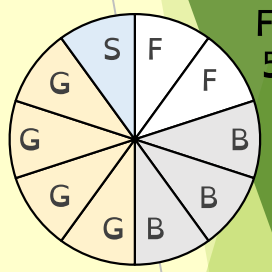
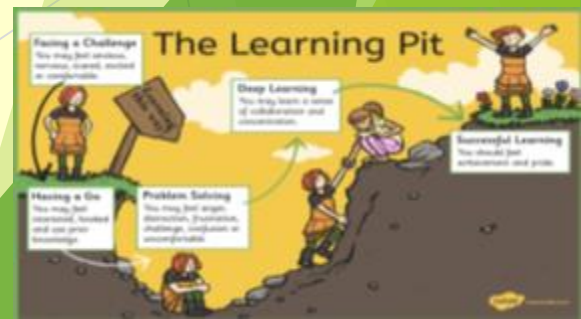
Forest School
530 students