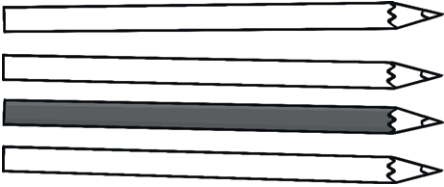


Name:

Maths Assessment Year 6: Statistics

You will need a ruler and coloured pencil crayons for this assessment (4 different colours).



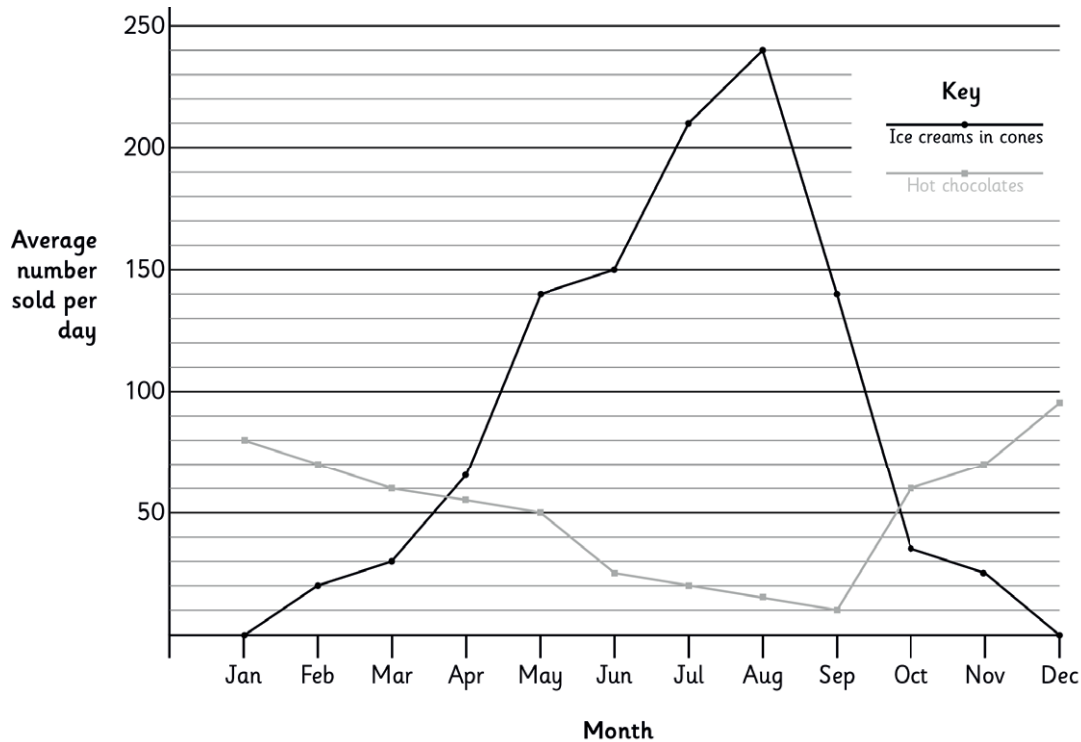
1. Interpret and construct pie charts and line graphs and use these to solve problems.
2. Calculate and interpret the mean as an average.

Maths Assessment Year 6: Statistics

1. Interpret and construct pie charts and line graphs and use these to solve problems.

a) There is an ice cream van in the park.

This line graph shows how many ice creams in cones and hot chocolates the ice cream van sells on average per day, during each month of the year.



Which is the most popular item sold in August?	
How many hot chocolates are sold on average per day in April?	
What is the difference between the average number of ice creams and hot chocolates sold each day in November?	
During how many months did the ice cream van sell more than 100 ice creams on average per day?	
Ice cream cones come in packs of 50. How many boxes of ice cream cones will be needed per day in June?	

5 marks

Hot chocolates are sold for £2.00 each and ice creams are sold for £1.00 each. How much money is taken, on average each day, from the sale of ice creams and hot chocolates in March?

Show your working out:

2 marks

Total for this page

b) Tom is a 6 year old boy.

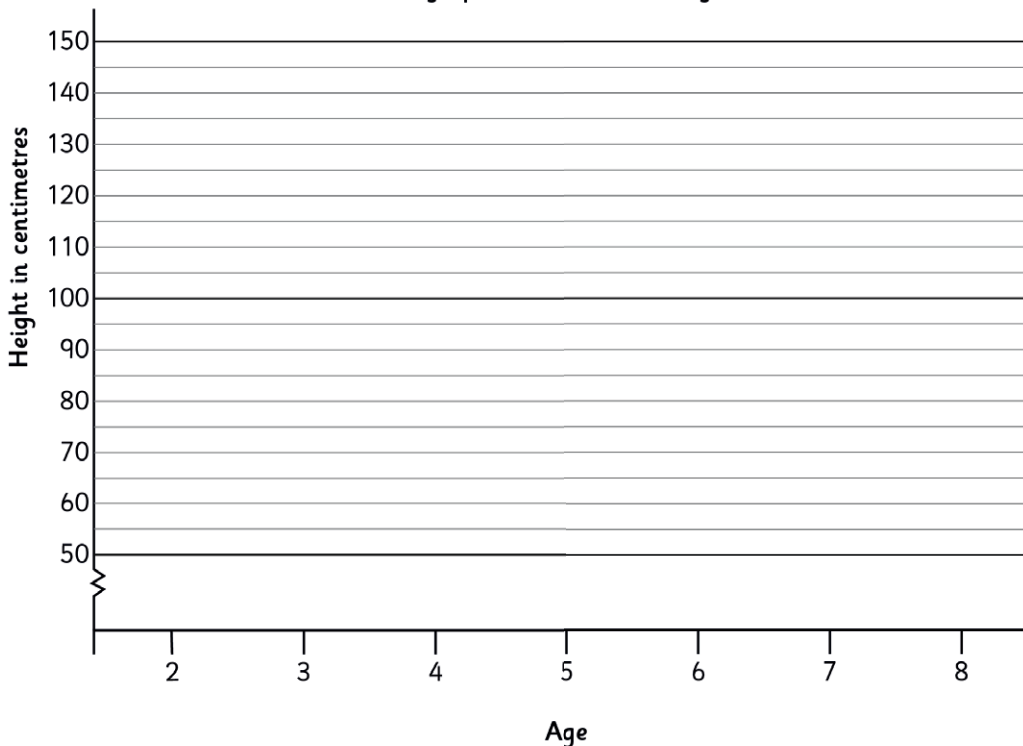
This chart shows Tom's height every two years from when he was two years old.

Plot this information as a line graph on the grid below.

Tom's age	Tom's height
2	80 cm
4	95cm
6	110cm



A graph to show Tom's height



Using the information on the graph, estimate Tom's approximate height when he was 5 years old.

Using information on the graph, predict how tall Tom will be when he is 8 years old.

For his seventh birthday, Tom is going to the theme park. He wants to go on a roller-coaster which requires riders have to be at least 120cm tall. Do you think he will be tall enough to go on the ride?

Yes / No

Explain your answer, using information from your graph:

.....

.....

.....



1 mark



2 marks



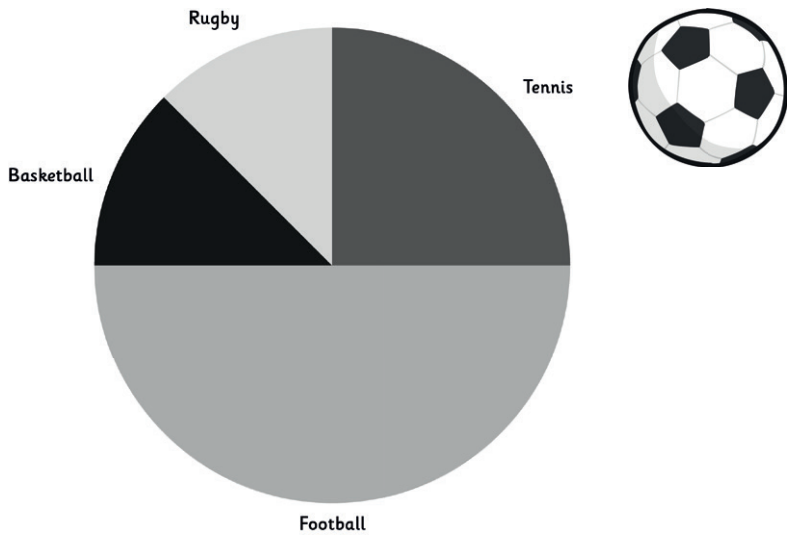
2 marks



Total for this page

c) 24 people were asked to name their favourite sport. This pie chart shows their responses:

A pie chart to show people's favourite sport.



What percentage of people said that basketball was their favourite sport?	
How many people said that football was their favourite sport?	
How many more people chose tennis as their favourite sport compared to rugby?	

3 marks

The council is improving a local sports centre. They used this information in this pie chart to help them decide what facilities to build at the sports centre.

There is already a football pitch at the sports centre. Should they build a tennis court, basketball court or rugby pitch?

Explain your answer fully, using information from the pie chart:

.....

.....

.....

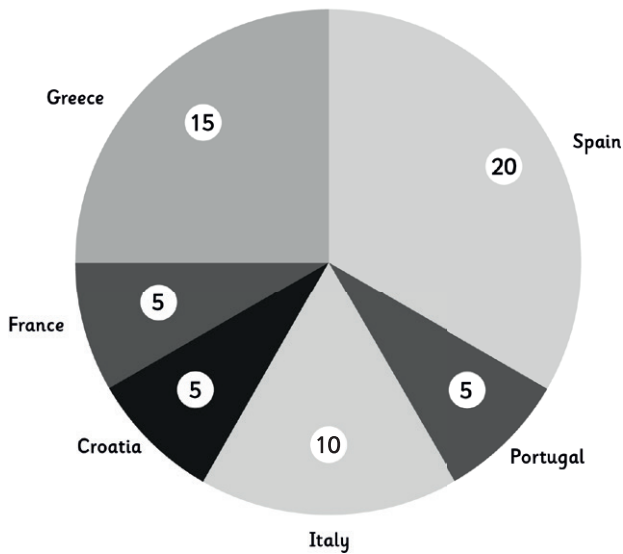
2 marks

Total for this page

d) At the airport, some holiday makers were asked where they were going to on holiday.

This pie chart shows their responses. The pie chart is labelled with the number of people who gave each answer.

A pie chart showing holidaymaker's holiday destinations.



How many people were surveyed altogether?	
What percentage of people surveyed said that they were going to Greece on holiday?	
What percentage of people surveyed said that they were going to Spain on holiday, to the nearest whole number?	

3 marks

Flights to Croatia cost £250. How much did the people going to Croatia spend on their flights in total?

Show your working out:

2 marks

Total for this page

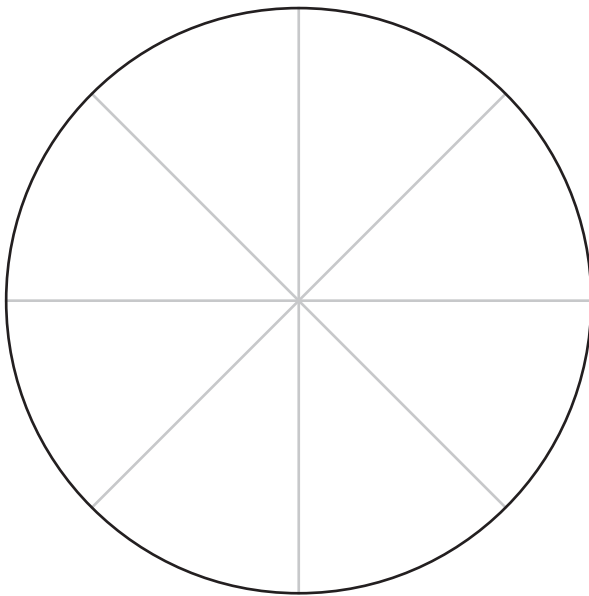
e) Some children in Key Stage 2 were asked to name their favourite fruit. 24 children were surveyed altogether.

This chart shows their answers.

Type of fruit	Number of children
Banana	6
Apple	3
Peach	12
Mango	3



Use the frame below to create a pie chart to show this information. Use coloured pencil crayons and create a key to show what each section represents.



Key	
<input type="checkbox"/>	Banana
<input type="checkbox"/>	Apple
<input type="checkbox"/>	Peach
<input type="checkbox"/>	Mango

What percentage of children surveyed gave the answer peach as their favourite fruit?	
What is the percentage difference between the number of children who answered banana and mango as their favourite fruit?	



1 mark



2 marks



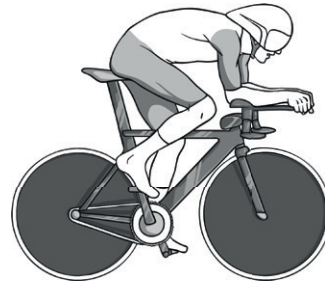
Total for this page

2. Calculate and interpret the mean as an average.

a) Tony is training for a cycling race.

This chart shows the time it takes her to cycle 10 kilometres each day in a week.

Day	Time taken to cycle 10 kilometres
Monday	32 minutes
Tuesday	29 minutes
Wednesday	29 minutes
Thursday	26 minutes
Friday	28 minutes
Saturday	26 minutes
Sunday	26 minutes



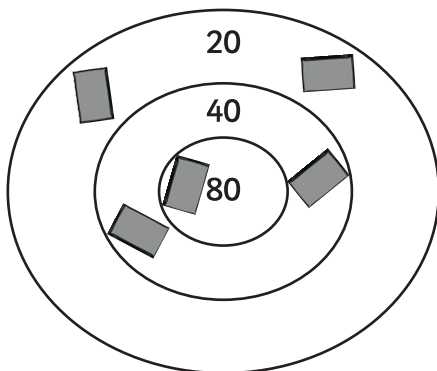
Circle the number below that shows the **mean average** of this data:

28 minutes	32 minutes	26 minutes	29 minutes	30 minutes
------------	------------	------------	------------	------------

1 mark

b) 'Beanbag Throw' is a game which involves children throwing five bean bags into some hoops to score points.

This is what the hoops looked like after Nisha had taken her turn.

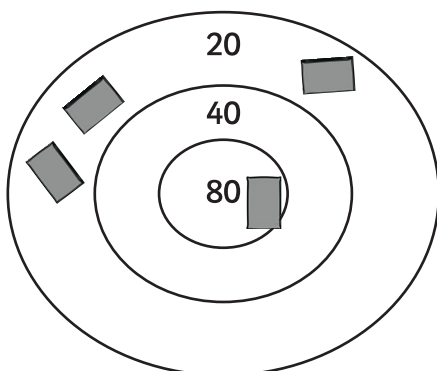


What is the mean average score Nisha achieved per throw?

..... points

1 mark

This is what the hoops look like after Connor has thrown four bean bags.



What score does Connor have to get in his final throw to achieve an average score of 36 points per throw?

..... points

1 mark

Total for this page

- c) Some children are selling cupcakes on a stall at the school fayre to raise money for some new books for the school library.

This chart shows how many cupcakes are sold each hour up until 1pm.

Time	Number of cupcakes sold
9 - 10 am	17
10 - 11 am	18
11 - 12 noon	20
12 - 1pm	17

Use this information to predict how many cupcakes the children will sell in total by the time the stall closes at 4pm.

Show your working out.



2 marks



Total for this page

question	answer	marks	notes										
1. Interpret and construct pie charts and line graphs and use these to solve problems.													
a	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Which is the most popular item sold in August?</td> <td style="width: 20%;">Ice cream</td> </tr> <tr> <td>How many hot chocolates are sold on average per day in April?</td> <td>55</td> </tr> <tr> <td>What is the difference between the average number of ice creams and hot chocolates sold each day in November?</td> <td>45</td> </tr> <tr> <td>During how many months did the ice cream van sell more than 100 ice creams on average per day?</td> <td>5</td> </tr> <tr> <td>Ice cream cones come in packs of 50. How many boxes of ice cream cones will be needed per day in June?</td> <td>3</td> </tr> </table>	Which is the most popular item sold in August?	Ice cream	How many hot chocolates are sold on average per day in April?	55	What is the difference between the average number of ice creams and hot chocolates sold each day in November?	45	During how many months did the ice cream van sell more than 100 ice creams on average per day?	5	Ice cream cones come in packs of 50. How many boxes of ice cream cones will be needed per day in June?	3	5	Award one mark for each correct answer.
	Which is the most popular item sold in August?	Ice cream											
How many hot chocolates are sold on average per day in April?	55												
What is the difference between the average number of ice creams and hot chocolates sold each day in November?	45												
During how many months did the ice cream van sell more than 100 ice creams on average per day?	5												
Ice cream cones come in packs of 50. How many boxes of ice cream cones will be needed per day in June?	3												
<p> $£2 \times 60 = £120$ $£1 \times 30 = £30$ $£120 + £30 = £150$ £150 </p>	2	Award two marks for a correct answer. Where the answer is wrong, award one mark for evidence of a correct calculation.											
b	<p>A graph to show Tom's height</p>	1											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Using the information on the graph, estimate Tom's approximate height when he was 5 years old.</td> <td style="width: 50%;">Accept an answer between 100 and 105 cm.</td> </tr> <tr> <td>Using information on the graph, predict how tall Tom will be when he is 8 years old.</td> <td>Accept an answer between 123 and 127cm</td> </tr> </table>	Using the information on the graph, estimate Tom's approximate height when he was 5 years old.	Accept an answer between 100 and 105 cm.	Using information on the graph, predict how tall Tom will be when he is 8 years old.	Accept an answer between 123 and 127cm	2	Award one mark for each correct answer.						
	Using the information on the graph, estimate Tom's approximate height when he was 5 years old.	Accept an answer between 100 and 105 cm.											
Using information on the graph, predict how tall Tom will be when he is 8 years old.	Accept an answer between 123 and 127cm												
<p>For his seventh birthday, Tom is going to the theme park. He wants to go on a rollercoaster which requires riders have to be at least 120cm tall. Do you think he will be tall enough to go on the ride?</p> <p>Yes No</p>	2	Award one mark for the answer 'no' identified. Award a further mark for a relevant explanation.											

question	answer	marks	notes
c	What percentage of people said that basketball was their favourite sport?	12.5%	3 Award one mark for each correct answer.
	How many people said that football was their favourite sport?	12	
	How many more people chose tennis as their favourite sport compared to rugby?	3	
d	Tennis court It is twice as popular as rugby or basketball		2 Award one mark for the answer of 'tennis court'. Award a further mark for a relevant explanation, referring to the data in the pie chart.
	How many people were surveyed altogether?	65	3 Award one mark for each correct answer.
	What percentage of people surveyed said that they were going to Greece on holiday?	25%	
	What percentage of people surveyed said that they were going to Spain on holiday, to the nearest whole number?	33%	
5 x £250 = £1250		2 Award two marks for a correct answer. Where the answer is wrong, award one mark for evidence of a correct calculation.	
e	<p>50% of the chart coloured to represent peach, 25% coloured to represent banana, 12.5% coloured to represent apple and 12.5% coloured to represent mango (with corresponding colours on the key).</p>		1 Accept sections coloured in any order / position, as long as the intention is clear.
	What percentage of children surveyed gave the answer peach as their favourite fruit?	50%	2 Award one mark for each correct answer.
	What is the percentage difference between the number of children who answered banana and mango as their favourite fruit?	12.5%	

question	answer	marks	notes
2. Calculate and interpret the mean as an average.			
a	28 minutes 32 minutes 26 minutes 29 minutes 30 minutes	1	
b	What is the mean average score Nisha achieved per throw? 40 points	1	
	What score does Connor have to get in his final throw to achieve an average score of 36 points per throw? 40 points	1	
c	$17 + 18 + 20 + 17 = 72$ $72 \div 4 = 18$ $18 \times 3 = 54$ $54 + 72 = 126$ 126 cupcakes	2	Award two marks for a correct answer. Where the answer is wrong, award one mark for evidence of a correct calculation.
		Total 30	