

Pie Chart - Worksheet

Skill

Group A - Finding the angles

Work out the angles for these pie charts:

1)

Colour	Frequency
Blue	1
Red	1
Yellow	2
	TOTAL = 4

2)

Colour	Frequency
Blue	2
Red	3
Yellow	1
	TOTAL = 6

3)

Colour	Frequency
Blue	4
Red	1
Yellow	3
	TOTAL = 8

4)

Colour	Frequency
Blue	5
Red	2
Yellow	3
	TOTAL = 10

5)

Colour	Frequency
Blue	5
Red	8
Yellow	7
	TOTAL = 20

6)

Colour	Frequency
Blue	9
Red	6
Yellow	15
	TOTAL = 30

7)

Colour	Frequency
Blue	1
Green	2
Red	3
Yellow	6
	TOTAL = 12

8)

Colour	Frequency
Blue	3
Green	5
Red	10
Yellow	6
	TOTAL = 24

9)

Colour	Frequency
Blue	6
Green	8
Red	12
Yellow	10
	TOTAL = 36

Pie Chart - Worksheet

Group B - Drawing pie charts

Using your answers from Group A, draw pie charts for these frequency tables:

1)

Colour	Frequency
Blue	1
Red	1
Yellow	2
	TOTAL = 4

2)

Colour	Frequency
Blue	2
Red	3
Yellow	1
	TOTAL = 6

3)

Colour	Frequency
Blue	4
Red	1
Yellow	3
	TOTAL = 8

4)

Colour	Frequency
Blue	5
Red	2
Yellow	3
	TOTAL = 10

5)

Colour	Frequency
Blue	5
Red	8
Yellow	7
	TOTAL = 20

6)

Colour	Frequency
Blue	9
Red	6
Yellow	15
	TOTAL = 30

7)

Colour	Frequency
Blue	1
Green	2
Red	3
Yellow	6
	TOTAL = 12

8)

Colour	Frequency
Blue	3
Green	5
Red	10
Yellow	6
	TOTAL = 24

9)

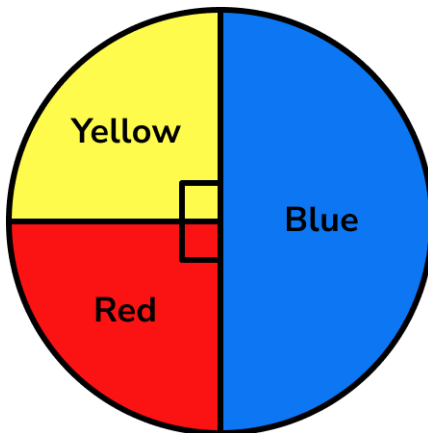
Colour	Frequency
Blue	6
Green	8
Red	12
Yellow	10
	TOTAL = 36

Pie Chart - Worksheet

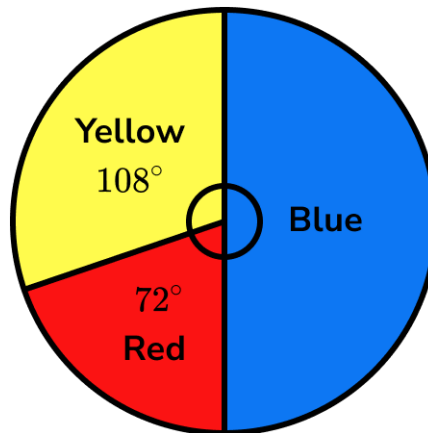
Group C - Finding the frequencies

Find the frequencies for each sector of these pie charts:

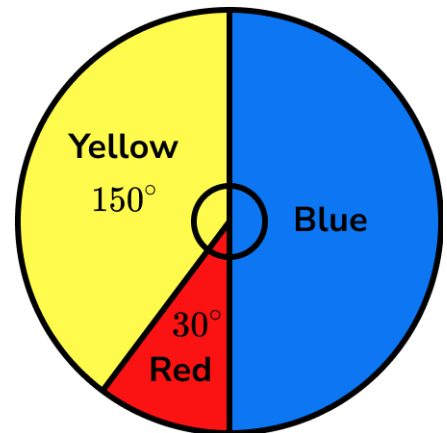
1) Total = 8



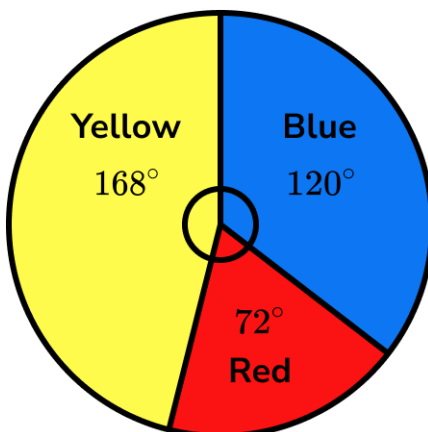
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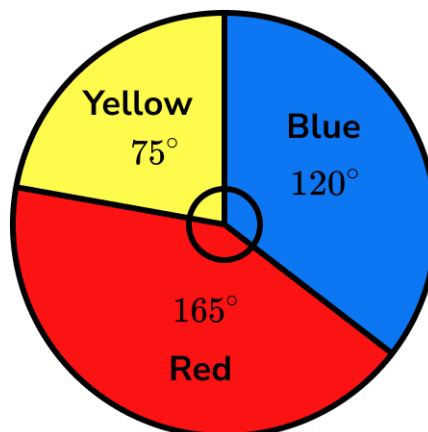
3) Total = 12



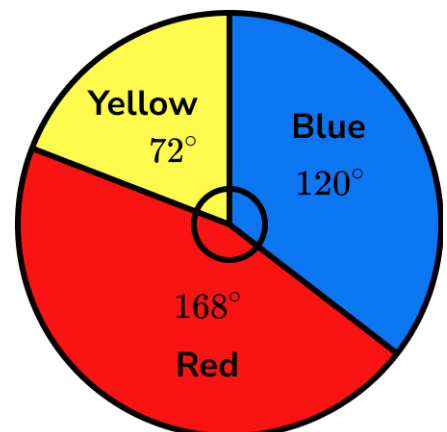
4) Total = 15



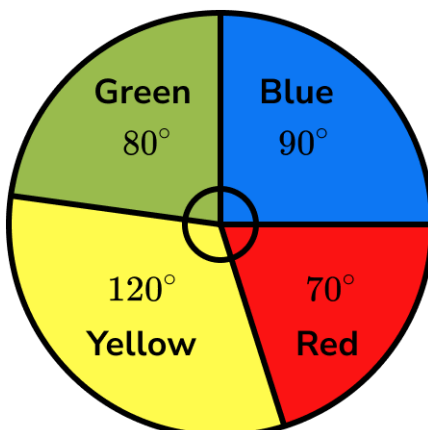
5) Total = 24



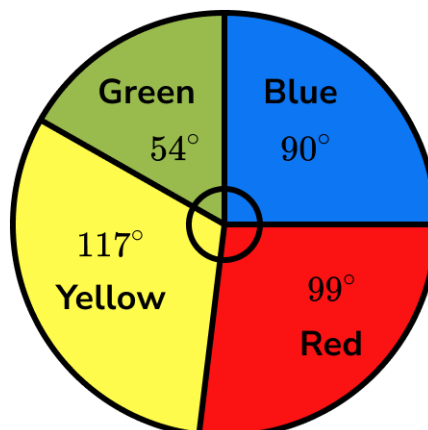
6) Total = 30



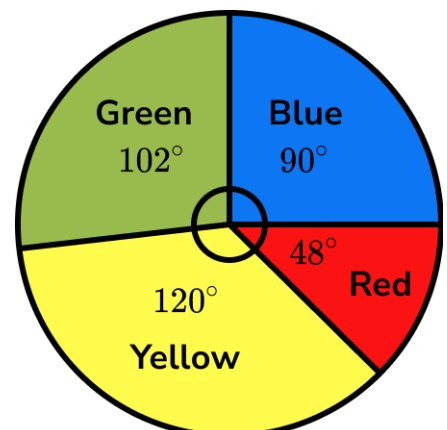
7) Total = 36



8) Total = 40



9) Total = 60



Pie Chart - Applied Questions

Applied

- 1) (a) The table shows the results of the last 15 games played by a hockey team.

Results	Frequency
Won	5
Lost	7
Drawn	3

Draw a pie chart to show this information.

- (b) The hockey team wins the next 3 games.

Which sectors of the pie chart increase?

Which sectors of the pie chart decrease?

Which sectors of the pie chart stay the same size?

- 2) (a) An animal rescue centre has these 24 animals at the centre.

Animals	Frequency
Dogs	12
Cats	7
Rabbits	3
Other	2

Draw a pie chart to show this information.

- (b) 3 of the dogs and 1 cat are rehomed and leave the animal rescue centre.

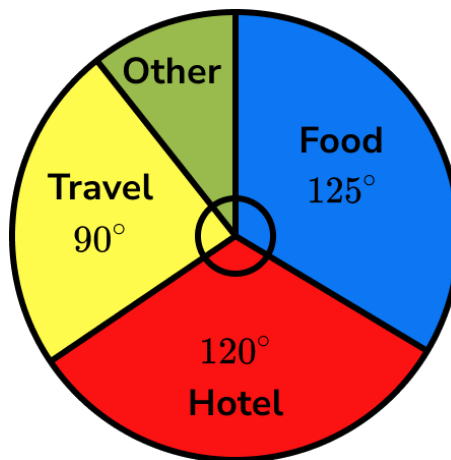
Which sectors of the pie chart increase?

Which sectors of the pie chart decrease?

Which sectors of the pie chart stay the same size?

Pie Chart - Applied Questions

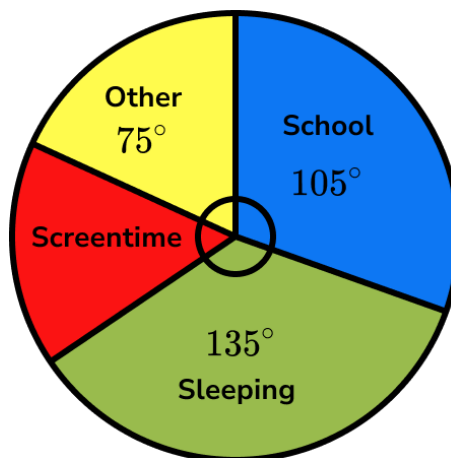
- 3) (a) The total cost of a holiday was £720.



The pie chart shows how this cost was made up.
How much money was spent on travel?

- (b) How much money was spent on “Other”?

- 4) (a) Erin draws a pie chart to show how she spends a typical school day.



Work out how many hours Erin spends at school.

- (b) Work out how many hours Erin spends on “Screentime”.

Pie Chart - Exam Questions

- 1) In a pie chart, one sector represents $\frac{1}{5}$ of the data.
What is the angle of that sector? Circle the correct answer.

5°

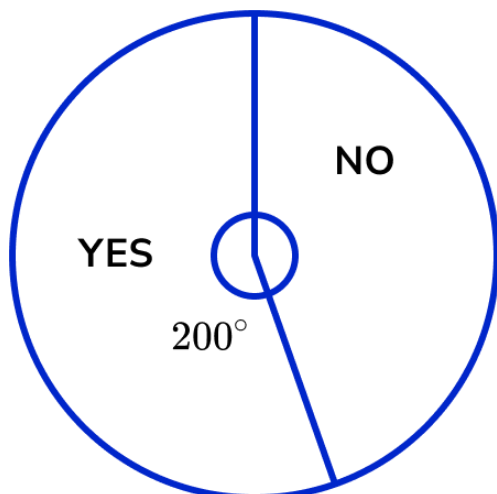
20°

50°

72°

.....
(1 mark)

- 2) A school does a survey asking if there should be a school uniform or not. The pie chart shows the results.



There were 80 **fewer** NO votes than YES votes.

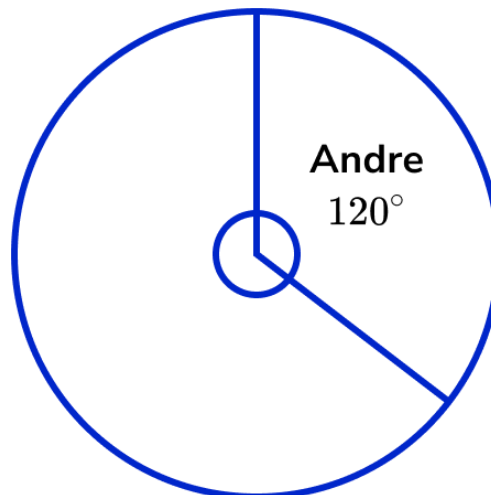
How many votes were there altogether?

.....votes
(3 marks)

Pie Chart - Exam Questions

- 3) (a) Tadeo records the winners of 45 games.
He starts to draw a pie chart of the results.

How many games did Andre win?



.....games
(2)

- (b) The table shows the **other** people who won games.
Complete the table.

Name	Frequency	Angle
Bai	4	32°
Clive	6	
Doug		64°
Erik		

.....
(3)

- (c) Complete the pie chart.

.....
(2)
(7 marks)

Pie Chart - Answers

	Question	Answer																																								
	Skill Questions																																									
Group A	<p>Work out the angles for these pie charts:</p> <p>1)</p> <table><thead><tr><th>Colour</th><th>Frequency</th></tr></thead><tbody><tr><td>Blue</td><td>1</td></tr><tr><td>Red</td><td>1</td></tr><tr><td>Yellow</td><td>2</td></tr><tr><td></td><td>TOTAL = 4</td></tr></tbody></table> <p>2)</p> <table><thead><tr><th>Colour</th><th>Frequency</th></tr></thead><tbody><tr><td>Blue</td><td>2</td></tr><tr><td>Red</td><td>3</td></tr><tr><td>Yellow</td><td>1</td></tr><tr><td></td><td>TOTAL = 6</td></tr></tbody></table> <p>3)</p> <table><thead><tr><th>Colour</th><th>Frequency</th></tr></thead><tbody><tr><td>Blue</td><td>4</td></tr><tr><td>Red</td><td>1</td></tr><tr><td>Yellow</td><td>3</td></tr><tr><td></td><td>TOTAL = 8</td></tr></tbody></table> <p>4)</p> <table><thead><tr><th>Colour</th><th>Frequency</th></tr></thead><tbody><tr><td>Blue</td><td>5</td></tr><tr><td>Red</td><td>2</td></tr><tr><td>Yellow</td><td>3</td></tr><tr><td></td><td>TOTAL = 10</td></tr></tbody></table>	Colour	Frequency	Blue	1	Red	1	Yellow	2		TOTAL = 4	Colour	Frequency	Blue	2	Red	3	Yellow	1		TOTAL = 6	Colour	Frequency	Blue	4	Red	1	Yellow	3		TOTAL = 8	Colour	Frequency	Blue	5	Red	2	Yellow	3		TOTAL = 10	<p>1)</p> <p>Blue 90° Red 90° Yellow 180°</p> <p>2)</p> <p>Blue 120° Red 180° Yellow 60°</p> <p>3)</p> <p>Blue 180° Red 45° Yellow 135°</p> <p>4)</p> <p>Blue 180° Red 72° Yellow 108°</p>
Colour	Frequency																																									
Blue	1																																									
Red	1																																									
Yellow	2																																									
	TOTAL = 4																																									
Colour	Frequency																																									
Blue	2																																									
Red	3																																									
Yellow	1																																									
	TOTAL = 6																																									
Colour	Frequency																																									
Blue	4																																									
Red	1																																									
Yellow	3																																									
	TOTAL = 8																																									
Colour	Frequency																																									
Blue	5																																									
Red	2																																									
Yellow	3																																									
	TOTAL = 10																																									

Pie Chart - Answers

Group A

5)

Colour	Frequency
Blue	5
Red	8
Yellow	7
	TOTAL = 20

6)

Colour	Frequency
Blue	9
Red	6
Yellow	15
	TOTAL = 30

7)

Colour	Frequency
Blue	1
Green	2
Red	3
Yellow	6
	TOTAL = 12

8)

Colour	Frequency
Blue	3
Green	5
Red	10
Yellow	6
	TOTAL = 24

9)

Colour	Frequency
Blue	6
Green	8
Red	12
Yellow	10
	TOTAL = 36

5)

Blue 90°
 Red 144°
 Yellow 126°

6)

Blue 108°
 Red 72°
 Yellow 180°

7)

Blue 30°
 Green 60°
 Red 90°
 Yellow 180°

8)

Blue 45°
 Green 75°
 Red 150°
 Yellow 90°

9)

Blue 60°
 Green 80°
 Red 120°
 Yellow 100°

Pie Chart - Answers

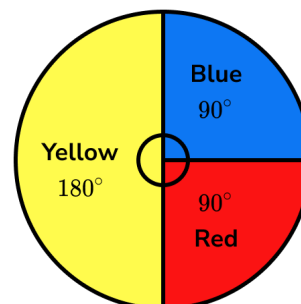
Group B

Using your answers from Group A, draw pie charts for these frequency tables:

1)

Colour	Frequency
Blue	1
Red	1
Yellow	2
	TOTAL = 4

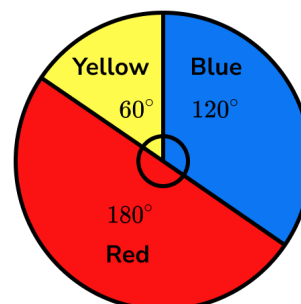
1)



2)

Colour	Frequency
Blue	2
Red	3
Yellow	1
	TOTAL = 6

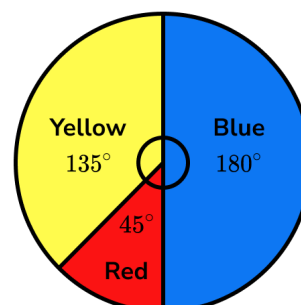
2)



3)

Colour	Frequency
Blue	4
Red	1
Yellow	3
	TOTAL = 8

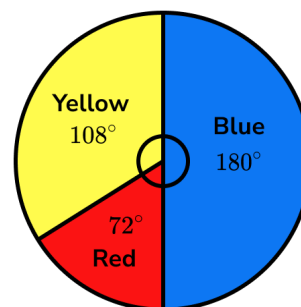
3)



4)

Colour	Frequency
Blue	5
Red	2
Yellow	3
	TOTAL = 10

4)



Pie Chart - Answers

Group B

5)

Colour	Frequency
Blue	5
Red	8
Yellow	7
	TOTAL = 20

6)

Colour	Frequency
Blue	9
Red	6
Yellow	15
	TOTAL = 30

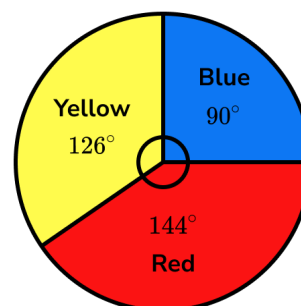
7)

Colour	Frequency
Blue	1
Green	2
Red	3
Yellow	6
	TOTAL = 12

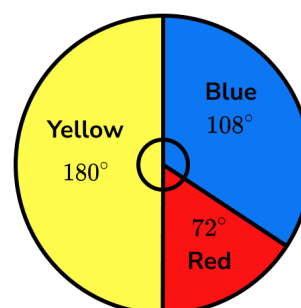
8)

Colour	Frequency
Blue	3
Green	5
Red	10
Yellow	6
	TOTAL = 24

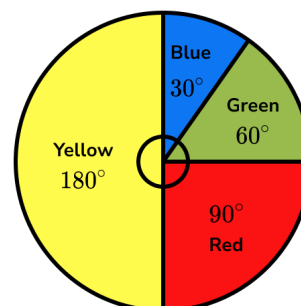
5)



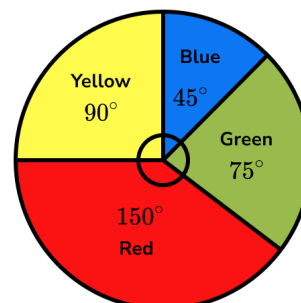
6)



7)



8)



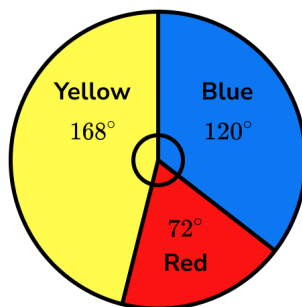
Pie Chart - Answers

Group B	9) <table><thead><tr><th>Colour</th><th>Frequency</th></tr></thead><tbody><tr><td>Blue</td><td>6</td></tr><tr><td>Green</td><td>8</td></tr><tr><td>Red</td><td>12</td></tr><tr><td>Yellow</td><td>10</td></tr><tr><td></td><td>TOTAL = 36</td></tr></tbody></table>	Colour	Frequency	Blue	6	Green	8	Red	12	Yellow	10		TOTAL = 36	9)
Colour	Frequency													
Blue	6													
Green	8													
Red	12													
Yellow	10													
	TOTAL = 36													
Group C	<p>Find the frequencies for each sector of these pie charts:</p> <p>1) Total = 8</p>	<p>1)</p> <p>Blue = 4 Red = 2 Yellow = 2</p>												
	<p>2) Total = 10</p>	<p>2)</p> <p>Blue = 5 Red = 2 Yellow = 3</p>												
	<p>3) Total = 12</p>	<p>3)</p> <p>Blue = 6 Red = 1 Yellow = 5</p>												

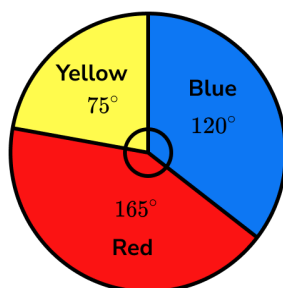
Pie Chart - Answers

Group C

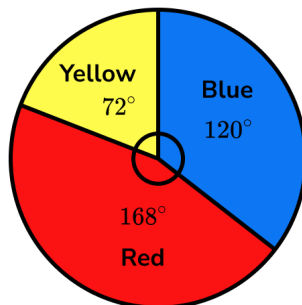
4) Total = 15



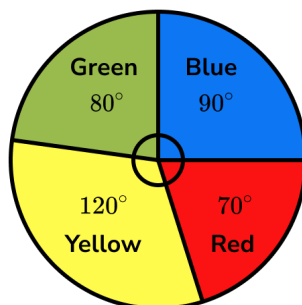
5) Total = 24



6) Total = 30



7) Total = 36



4)

Blue = 5

Red = 3

Yellow = 7

5)

Blue = 8

Red = 11

Yellow = 5

6)

Blue = 10

Red = 14

Yellow = 6

7)

Blue = 9

Red = 7

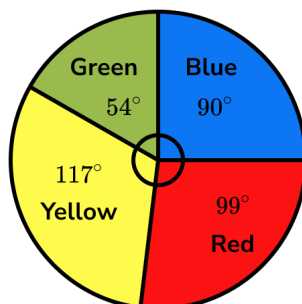
Yellow = 12

Green = 8

Pie Chart - Answers

Group C

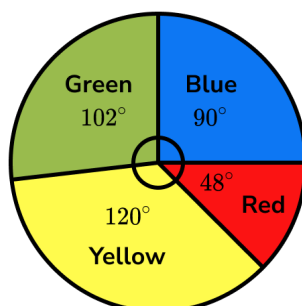
8) Total = 40



8)

Blue = 10
Red = 11
Yellow = 13
Green = 6

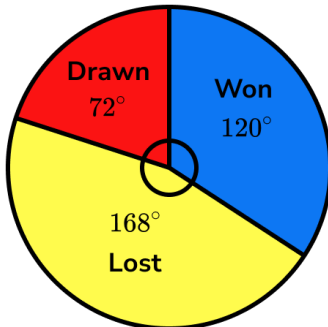
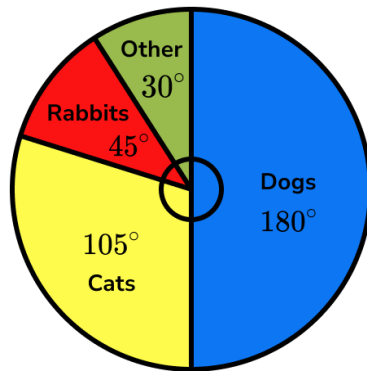
9) Total = 60



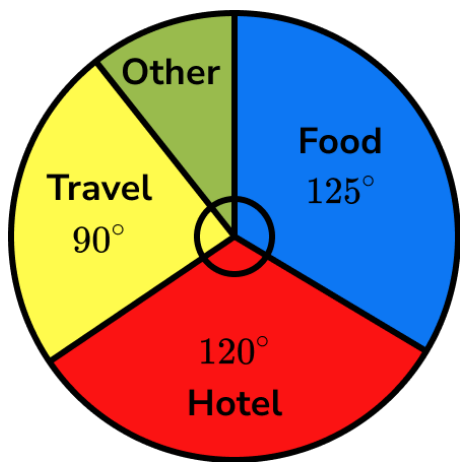
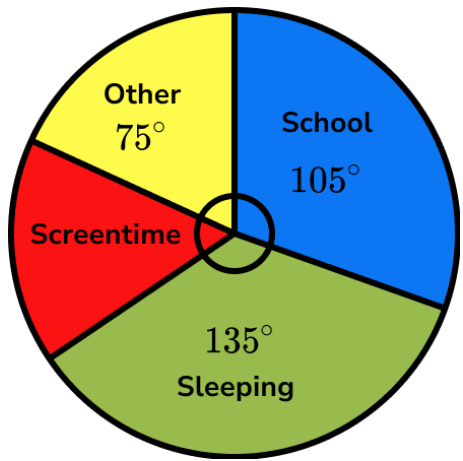
9)

Blue = 15
Red = 8
Yellow = 20
Green = 17

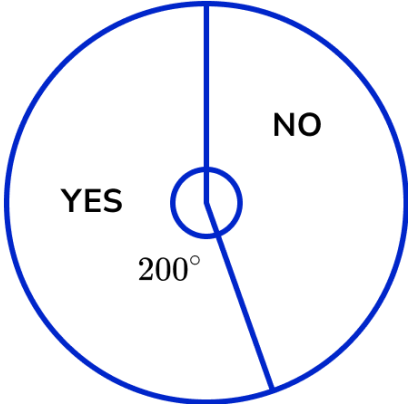
Pie Chart - Answers

	Question	Answer										
	Applied Questions											
1)	<p>a) The table shows the results of the last 15 games played by a hockey team.</p> <table border="1"><thead><tr><th>Results</th><th>Frequency</th></tr></thead><tbody><tr><td>Won</td><td>5</td></tr><tr><td>Lost</td><td>7</td></tr><tr><td>Drawn</td><td>3</td></tr></tbody></table> <p>Draw a pie chart to show this information.</p> <p>b) The hockey team wins the next 3 games. Which sectors of the pie chart increase? Which sectors of the pie chart decrease? Which sectors of the pie chart stay the same size?</p>	Results	Frequency	Won	5	Lost	7	Drawn	3	<p>a)</p>  <p>b) The won sector increases. The lost and drawn sectors decrease. None of the sectors stay the same size.</p>		
Results	Frequency											
Won	5											
Lost	7											
Drawn	3											
2)	<p>a) An animal rescue centre has these 24 animals at the centre.</p> <table border="1"><thead><tr><th>Animals</th><th>Frequency</th></tr></thead><tbody><tr><td>Dogs</td><td>12</td></tr><tr><td>Cats</td><td>7</td></tr><tr><td>Rabbits</td><td>3</td></tr><tr><td>Other</td><td>2</td></tr></tbody></table> <p>Draw a pie chart to show this information.</p> <p>b) 3 of the dogs and 1 cat are rehomed and leave the animal rescue centre. Which sectors of the pie chart increase? Which sectors of the pie chart decrease? Which sectors of the pie chart stay the same size?</p>	Animals	Frequency	Dogs	12	Cats	7	Rabbits	3	Other	2	<p>a)</p>  <p>b) The dogs sector decreases in size. The cats, rabbits and other sectors increase in size.</p>
Animals	Frequency											
Dogs	12											
Cats	7											
Rabbits	3											
Other	2											

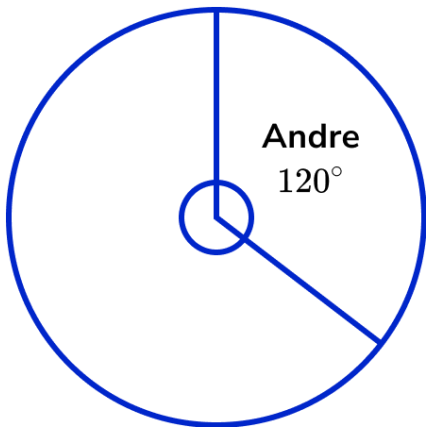
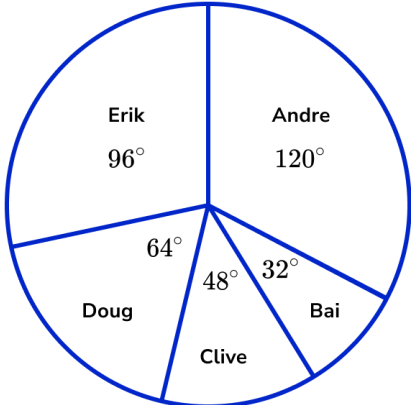
Pie Chart - Answers

3)	<p>a) The total cost of a holiday was £720.</p>  <p>The pie chart shows how this cost was made up. How much money was spent on travel?</p> <p>b) How much money was spent on "Other"?</p>	<p>a) £180</p> <p>b) £50</p>
4)	<p>a) Erin draws a pie chart to show how she spends a typical school day.</p>  <p>Work out how many hours Erin spends at school.</p> <p>b) Work out how many hours Erin spends on "Screentime".</p>	<p>a) 7 hours</p> <p>b) 3 hours</p>

Pie Chart - Mark Scheme

	Question	Answer	
	Exam Questions		
1)	<p>In a pie chart, one sector represents $\frac{1}{5}$ of the data.</p> <p>What is the angle of that sector? Circle the correct answer.</p> <p>5° 20° 50° 72°</p>	72° (1)	(1)
2)	<p>A school does a survey asking if there should be a school uniform or not.</p> <p>The pie chart shows the results.</p>  <p>There were 80 fewer NO votes than YES votes.</p> <p>How many votes were there altogether?</p>	$360^\circ - 200^\circ = 160^\circ$ (1) $200^\circ - 160^\circ = 40^\circ$ So 40° represents 80 votes $360^\circ \div 40^\circ = 9$ (1) $9 \times 80 = 720$ votes (1)	(3)

Pie Chart - Mark Scheme

3) (a)	<p>Tadeo records the winners of 45 games. He starts to draw a pie chart of the results.</p>  <p>How many games did Andre win?</p>	(a) $\frac{120}{360} \times 45$ (1) Andre won 15 games (1)	(2)																														
(b)	<p>The table shows the other people who won games.</p> <table border="1" data-bbox="261 1122 778 1404"><thead><tr><th>Name</th><th>Frequency</th><th>Angle</th></tr></thead><tbody><tr><td>Bai</td><td>4</td><td>32°</td></tr><tr><td>Clive</td><td>6</td><td></td></tr><tr><td>Doug</td><td></td><td>64°</td></tr><tr><td>Erik</td><td></td><td></td></tr></tbody></table> <p>Complete the table.</p>	Name	Frequency	Angle	Bai	4	32°	Clive	6		Doug		64°	Erik			<p>(b)</p> <table border="1" data-bbox="861 1021 1378 1296"><thead><tr><th>Name</th><th>Frequency</th><th>Angle</th></tr></thead><tbody><tr><td>Bai</td><td>4</td><td>32°</td></tr><tr><td>Clive</td><td>6</td><td>48°</td></tr><tr><td>Doug</td><td>8</td><td>64°</td></tr><tr><td>Erik</td><td>12</td><td>96°</td></tr></tbody></table> <p>For Clive correct angle (1) For Doug correct frequency (1) For Erik - both values correct (1)</p>	Name	Frequency	Angle	Bai	4	32°	Clive	6	48°	Doug	8	64°	Erik	12	96°	(3)
Name	Frequency	Angle																															
Bai	4	32°																															
Clive	6																																
Doug		64°																															
Erik																																	
Name	Frequency	Angle																															
Bai	4	32°																															
Clive	6	48°																															
Doug	8	64°																															
Erik	12	96°																															
(c)	<p>Complete the pie chart.</p>	<p>(c)</p>  <p>For one correct sector drawn and labelled (1) For ALL correct sectors drawn and labelled (1)</p>	(2)																														

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