Pie Charts- Answers

Key Stage 2: 2003 Paper A

1.

21a	Answer in the range 30% to 36% inclusive.	1m	
21b	An explanation which recognises that both teams won half their games, but both teams played a different number of games, eg ■ 'Half of 30 is not the same as half of 24'; ■ 'Because $\frac{1}{2}$ of 30 = 15 but $\frac{1}{2}$ of 24 = 12'; ■ 'Because 15 is more than 12'.	1m U1	*No mark is awarded for circling 'No' alone.* **Do not** *accept vague or arbitrary explanation, eg* ■ *'The netball team played more games';* ■ *'Both teams won half their games';* ■ *'30 is more than 24'.* *If 'Yes' is circled but a correct unambiguous explanation is given, then award the mark.*

Key Stage 2: 2005 Paper A

1.

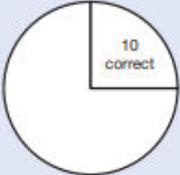| 18	Award **TWO** marks for boxes ticked and crossed as shown: ✗ ✓ ✗ ✓ If the answer is incorrect, award **ONE** mark for any three boxes correctly completed.	Up to 2m	*Accept alternative unambiguous indications such as **Y** or **N**.* *For **TWO** marks, accept:* ☐ ✓ ☐ ✓

Key Stage 2: 2006 Paper A

1.

20a	Answer in the range $\frac{1}{10}$ to $\frac{3}{20}$ inclusive.	1m	*Range includes $\frac{1}{7}$, $\frac{1}{8}$, $\frac{1}{9}$ and $\frac{1}{10}$* *Accept decimals (0.1 to 0.15 inclusive) or percentages (10% −15% inclusive).*
20b	Answer in the range 40 to 50 inclusive.	1m	

Key Stage 2: 2009 Paper A

1.

21a	20%	1m	**Do not** accept equivalent fractions or decimals.
21b	An explanation which recognises that 25% chose Jack, eg: ■ 'A quarter of the children guessed Jack and that is 10 out of 40' ■ '10 out of 40 ($\frac{1}{4}$) were correct and the pie chart shows $\frac{1}{4}$ chose Jack' ■ 'Half guessed Amir which is 20 and Jack is half of that which is 10' ■ '10 guessed right and the pie chart shows three times as many chose the other runners' ■ '25% chose Jack and 25% were correct' ■	1m U1	No mark is awarded for 'Jack' alone. **Do not** accept vague or incomplete explanations, eg: ■ 'There were 40 children altogether' ■ 'Less than half chose Jack' ■ 'Because Jack is the fastest'. If the answer to 'Who won the race?' is incorrect, but a correct, unambiguous explanation is given, then award the mark.

Key Stage 2: 2010 Paper A

1.

22a	Answer in the range $\frac{13}{100}$ to $\frac{1}{5}$ inclusive	1m	Range includes $\frac{1}{6}$ and $\frac{1}{7}$ Accept decimals or percentages. (0.13 to 0.2 inclusive) (13% to 20 % inclusive)
22b	Answer in the range 500 to 800 inclusive	1m	

Key Stage 2: 2011 Paper B L6
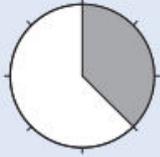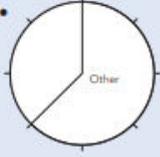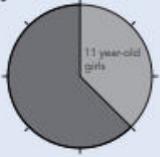
1.

9	2m **or** 1m	16.8p or 17p or equivalent Shows the digits 168 or 17 or Shows a complete correct method with not more than one computational or rounding error eg • 56 × 10 × 3 ÷ 100 • 5.6(0) × 0.03 • 560 ÷ 100 = 5.6 6p *(premature rounding)* × 3 = 18	**! Money** See general guidance on page 8

Key Stage 2: 2012 Paper A L6

1.

11	Divides the pie chart into two correct sectors and shades/labels correctly, eg	1m	✓ Unambiguous indication of shading/labelling eg ! Given key ignored Condone incorrect shading provided their labelling is unambiguous eg, accept ! Additional sectors shown Ignore provided the sector(s) for 11 year-old girls are clearly indicated eg, accept

Key Stage 2: 2012 Paper A

1.

22a	Answer in the range 15% inclusive to 25% exclusive	1m	**Do not** accept 25%
22b	Answer in the range 200g to 400g exclusive	1m	**Do not** accept 200g **OR** 400g.

Key Stage 2: 2013 Paper B

1.

25a	An explanation that shows that one quarter of 240 is more than one half of 80, eg:	1m (U1)	No mark is awarded for circling 'No' alone.
	■ 'Because only 40 are walking to Foxwood and 60 are walking to Midtown'		**Do not** accept vague or incomplete explanations, eg:
	■ 'Half of the people who walk is 40 and a quarter of the people who walk is 60'		■ 'Because at Foxwood it's a half and at Midtown it's a quarter'
			■ 'Because there are 80 children at Foxwood and 240 children at Midtown'
			If 'Yes' is circled but a correct unambiguous explanation is given then award the mark.
25b	Award **TWO** marks for the correct answer of 50	Up to 2m	
	If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg		Answer need not be obtained for the award of **ONE** mark.
	$240 \div 3 = 80$		
	$240 - 80 - 60 = 100$		
	$100 \div 2$		

Key Stage 2: 2014 Paper A L6

1.

12	216	3m		
		or		
	54 seen *(angle for mushroom soup)*	2m		
	OR			
	Shows or implies a correct method for tomato soup with not more than one computational error, eg:			
	• 360 − 90 = 240 *(error)* 240 ÷ 5 = 48 48 × 4 = 192			
	• 0.6 × 360			
	• 25% = chicken 75% ÷ 5 = 15% 15% of 360° = 54° 54° × 4			
		or		
	Shows the angle representing tomato soup and mushroom soup is 270	1m	✗	*Tomato soup is 270°*
	OR		✗	*Methods involving drawings of pie charts, without any values given*
	60% or $\frac{3}{5}$ seen *(as evidence of a correct method for tomato soup)*		✓	*Accept equivalent fractions or decimals,*
	OR			*eg:*
	Shows or implies a correct method for finding the angle required to represent mushroom soup, eg:			• $\frac{6}{10}$ • 0.6
	• 360° − 90° = 260° *(error)* 260° ÷ 5 = 40° *(error)*		✗	*Do not accept 60 or 60° for 60%*
	OR			
	Shows or implies a correct method for tomato soup with more than one computational error, eg:			
	• 360° − 90° = 240° *(error)* 240° × 4 ÷ 5 = 200° *(error)*			

Key Stage 2: 2014 Paper B L6

1.

10	32	2m		
		or		
	160 seen *(the total children in the school)*	1m	✗	*Do not accept 160° or 160%*
	OR			
	Shows or implies a complete, correct method, eg:			

	• 35 + 45 = 90 *(error)*
	  100 − 90 = 10
	  56 ÷ 35 = 1.6
	  1.6 × 10 = 16			

	• 35% of children = 56
	  total children = 56 × 100 ÷ 35 = 150 *(error)*
	  Reception = 100 − (45 + 35)% = 20%
	  Reception = 20% of 150
	  0.2 × 150 = 40 *(error)*			

	• 35% is 56
	  5% is 8
	  20% is 4 × 8 = 24 *(error)*			

Key Stage 2: 2015 Paper A L6

1.

4	Indicates all four correctly, ie:	2m	!	**Incomplete response**
	✓ ✗ ✗ ✓			For 2 marks, do not accept any box left blank
			!	**Other indication**
				Accept any unambiguous indication, eg:
				• 'Y' for ticked
		or		
	Indicates any three correctly	1m		

Key Stage 2: Paper 2 and 3 Reasoning - Sample

1.

Qu	Requirement	Mark	Additional guidance

11	Award **TWO** marks for the correct answer of £12396
	
	If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg:
	
	■ £8264
	  × 4
	   £33056
	
	   £33056
	 - 8264
	   £24792
	
	   £24792 ÷ 2
	OR
	
	■ £8264
	  × 3
	   £24792
	
	   £24792 ÷ 2
	OR
	
	■ £8264 ÷ 2 = £4132
	   £8264 + £4132
		Up to **2 marks**	Answer need not be obtained for the award of **ONE** mark.

Key Stage 2: 2016 Paper 2 Reasoning - Sample

1.

18	Award **ONE** mark for an explanation which recognises that the two pie charts represent different numbers of children, e.g.	1m	**Do not** accept vague or incomplete explanations, e.g.
	• '25 boys like milk chocolate best and more than 25 girls do' • 'It's almost half of 100 girls and that's more than half of 50 boys' • 'The pie chart shows that half of the boys chose milk chocolate and that's 25. About 45 girls chose milk chocolate because it's nearly half of the girls' pie chart' • '25 boys chose milk chocolate, but (whole number in the range 40–49) girls chose milk chocolate' • 'There are twice as many girls as boys so a quarter of the girls' pie chart is the same number as half of the boys' pie chart, and it's more than a quarter of the girls' • '$\frac{1}{2}$ of 50 boys chose milk = 25 $\frac{1}{4}$ of 100 girls chose plain = 25 and from the girls' pie chart it is obvious that more chose milk than plain' • 'There are twice as many girls as boys and the sizes of the pie charts show this and the area for boys who like milk chocolate is smaller than the area for girls who like it'.		• '100 is more than 50' • 'More girls took part than boys so more girls like milk chocolate' • 'The section for boys who like milk chocolate is smaller than the section for girls who like it'.
Question 18 commentary: The pie charts are presented using the mathematical convention that their areas are proportional to the numbers they represent, i.e. in this example the chart for girls has twice the area of the chart for boys.			

1.

6	Award **TWO** marks for only two correct boxes ticked, as shown:	Up to 2m	Accept alternative unambiguous positive indications, e.g. Y.
	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. ☐		
	Award **ONE** mark for: • only one correct box ticked and no incorrect boxes ticked **OR** • two correct boxes ticked and one incorrect box ticked.		