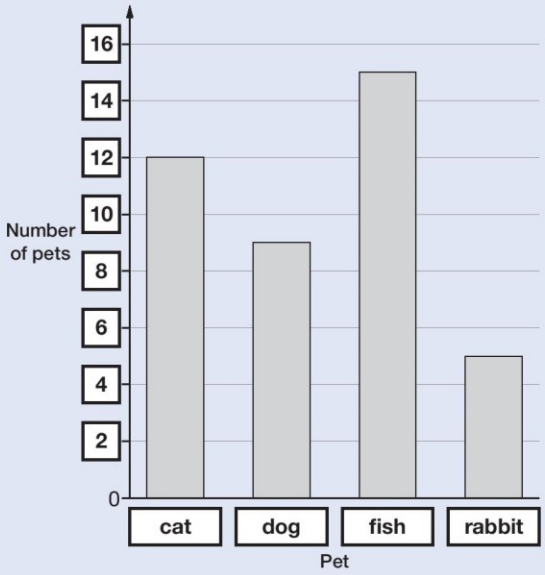
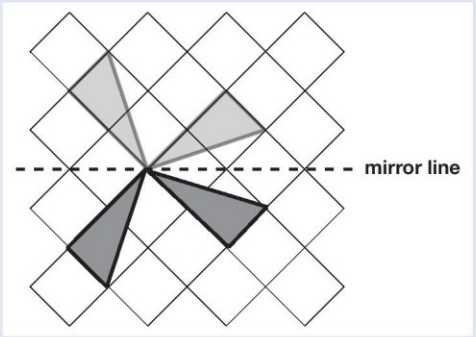
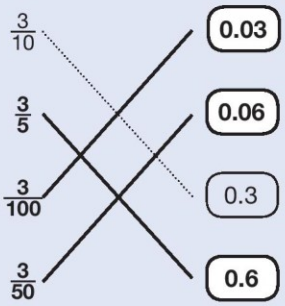
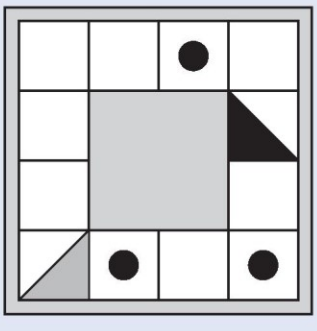
Paper 2: Calculator **not** allowed

Question	Requirement	Mark	Additional guidance
1	38	1m	
2a	Vertical axis completed correctly as shown.	1m	
2b	Horizontal axis completed correctly as shown.  	1m U1	Accept unambiguous abbreviations or recognisable misspellings.
3	Diagram completed as shown:  	1m	Accept slight inaccuracies in drawing (see page 5 for guidance). Diagram need not be shaded.
4	Three numbers circled as shown: (450) 350 (250) 150 (50) **OR** 450 (350) (250) (150) 50	1m	Accept alternative unambiguous indications, eg numbers ticked, crossed or underlined.

Paper 2: Calculator **not** allowed

Question	Requirement	Mark	Additional guidance
5a	43	**1m**	
5b	Award **TWO** marks for the correct answer of 24 If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg: ■ 77 – 18 – 35 = wrong answer **OR** ■ 35 + 18 = 53 77 – 53 = wrong answer	**Up to 2m**	Working must be carried through to reach an answer for the award of **ONE** mark.
6a	8 (−) 7 (+) 6 (−) 5 = 2	**1m** **U1**	
6b	8 (+) 7 (−) 6 (−) 5 = 4	**1m** **U1**	
7	20p 20p 20p 10p 10p 10p 10p	**1m** **U1**	Coins may be listed in any order. Accept coins with missing units.
8a	Two numbers from the sequence that total 96, eg: 43 **AND** 53 **OR** 23 **AND** 73	**1m**	Numbers may be given in either order. Accept negative numbers, eg –7 **AND** 103
8b	An explanation that recognises that adding three numbers ending in 3 will produce a number ending in a 9 eg: ■ 'They all end in 3 so adding three will give a number ending in 9' ■ 'If you add three numbers in the sequence you will always get a number ending in 9' ■ 'All the numbers are odd and 96 is even'	**1m** **U1**	**Do not** accept vague or incomplete explanations, eg: ■ 'All the numbers end in three' ■ 'It only works with two numbers' ■ '3 odds add to make an even'

Paper 2: Calculator **not** allowed

Question	Requirement	Mark	Additional guidance
9	Fractions connected correctly to decimals as shown:  	1m	
10	Award **TWO** marks for the correct answer of B **AND** C If the answer is incorrect, award **ONE** mark for: ■ B only **OR** ■ C only	Up to 2m	Letters may be given in either order.
11	24.56	1m	
12	Award **TWO** marks for all three values correct as shown: banana *2cm* **(*20cm*)** *2mm* *2m* *20m* apple *2g* *20kg* *200kg* **(*200g*)** *2kg* fruit juice *2ml* *2l* *20ml* **(*200ml*)** *20l* If the answer is incorrect, award **ONE** mark for two correct measurements.	Up to 2m	Accept alternative unambiguous indications, eg correct value filled in.
13	Award **TWO** marks for the diagram completed correctly as shown:  If the answer is incorrect, award **ONE** mark for three shapes positioned correctly.	Up to 2m	Accept inaccurate drawing, provided the intention is clear. Orientation of the triangle must be unambiguous. Dots need not be shaded.

Paper 2: Calculator **not** allowed

Question	Requirement	Mark	Additional guidance
14a	A 50 B **15** C **20** D **25**	**1m**	
14b	A **110** B **45** C 50 D **55**	**1m** U1	
15	Award **TWO** marks for a correct answer of 30 If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg: ■ 10% of 200 = 20 25% of 200 = 50 50 – 20 = wrong answer **OR** ■ 25% – 10% = 15% 15% of 200 = wrong answer	**Up to 2m**	Working must be carried through to reach an answer for the award of **ONE** mark.
16a	109	**1m**	
16b	An explanation that recognises that 100 people get up before 9am which is two-thirds of the total (150). ■ '13 + 28 + 59 = 100 which is two-thirds of the total' ■ '$\frac{1}{3}$ of 150 = 50 and 2 × 50 = 100' ■ '$\frac{2}{3}$ of 150 is 100' ■ '36 + 14 = 50 which is one-third after 9am'	**1m** U1	**Do not** accept vague or incomplete explanations, eg: ■ 'One-third are 9 o'clock or later' ■ '100 got up at 9am' ■ 'Twice as many got up before 9am.' ■ '13 + 28 + 59 = 100'
17	Any two numbers which total 40, eg: ■ 10 and 30 ■ 20 and 20 ■ 0 and 40 ■ 1 and 39	**1m**	Accept negative numbers and decimals.

Paper 2: Calculator **not** allowed

Question	Requirement	Mark	Additional guidance
18a	Accept answers in the range 22.2 to 22.8 exclusive.	**1m**	**Do not** accept 22.2 or 22.8
18b	Accept answers in the range 2:48pm to 2:52pm inclusive.	**1m**	The answer is a specific time (see page 7 for guidance).
18c	5	**1m**	
19	Award **TWO** marks for the correct answer of 45 **AND** 35 If the answer is incorrect, award **ONE** mark for: ■ either 35 **OR** 45 **OR** ■ evidence of appropriate working, eg 80 – 10 = 70 70 ÷ 2 = 35 35 + 10 = wrong answer	**Up to 2m** U1	Numbers may be given in either order. Working must be carried through to reach an answer for the award of **ONE** mark.
20a	A is (12, 6)	**1m**	Coordinates must be given in the correct order.
20b	B is (19, 3)	**1m**	If the answer to 20a is (19, 3) **AND** the answer to 20b is (12, 6) then award **ONE** mark for 20b Accept unambiguous answers written on the diagram.
21	Award **TWO** marks for the correct answer of 15 If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg: ■ 61 ÷ 2 = 30.5 30.5 + 0.5 = 31 31 ÷ 2 = 15.5 15.5 – 0.5 = wrong answer **OR** ■ 61 ÷ 2 = 30.5 30.5 – 0.5 = 30 (step error) 30 ÷ 2 = 15 15 – 0.5 = 14.5 (wrong answer)	**Up to 2m**	Working must be carried through to reach an answer for the award of **ONE** mark.

Paper 2: Calculator **not** allowed

Question	Requirement	Mark	Additional guidance
22	Award **TWO** marks for a triangle drawn with an angle in the range 53° to 57° inclusive **AND** length of base line in the range 8.2cm to 8.4cm inclusive (ie lower vertex of the triangle within the inner box on the diagram, see overlay). If the answer is incorrect, award **ONE** mark for: ■ a completed triangle drawn with an angle in the range 53° to 57° inclusive. **OR** ■ a completed triangle drawn with an angle in the range 52° to 58° inclusive **AND** length of base line 8.1cm to 8.5cm inclusive.	**Up to 2m**	Accept drawings where any side has been extended past a vertex. Accept drawings which do not use the given 6cm line, provided they have used a line with a length in the range 5.9cm to 6.1cm inclusive. Accept for **ONE** mark drawings not using the given 6cm line which have used a line **outside** the range 5.9cm to 6.1cm inclusive, provided they have an angle in the range 53° to 57° inclusive **AND** a base line in the range 8.2cm to 8.4cm inclusive. Accept for **ONE** mark drawings of **incomplete triangles**, provided they have an angle in the range 53° to 57° inclusive **AND** a base line in the range 8.2cm to 8.4cm inclusive.
23	3 **AND** 5 **AND** 7	**1m**	Numbers may be given in any order.

Paper 2: question 22 copy of overlay

Markers will use a transparent overlay of this diagram to mark children's answers to question 22. The overlay is attached to the printed version of this mark scheme.