

Bond

No.1 for exam success

11+ Maths

Multiple-choice Test Papers

Pack 2

Notes and Answers

This booklet contains:

- advice on how to administer the tests
- answers
- tutors' explanations for every answer
- links to **How To Do 11+ Maths**

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How to administer the tests

What do you need?

- A quiet, well-lit place to sit the test.
- A stock of pencils. HB pencils are best for multiple-choice papers.
- A pencil sharpener and an eraser.
- Blank paper for rough working.
- A clock or timer.
- *Calculators are not allowed.*

Before you start

Try to provide a calm yet formal atmosphere in which your child can take the test. It is important that you recreate the real test as closely as possible, so try to ensure your child has an appropriate work space and no distractions. Choose a time to do a test when your child is rested and relaxed.

Multiple-choice tests ask children to mark their answers in a separate answer booklet. Therefore, when reading the front page of the test paper with your child, point out the importance of answering carefully and rubbing out any altered answers clearly. (Read the section below for details of common pitfalls that can occur when using multiple-choice answer booklets.) Ensure that enough rough paper is available for working out answers; they should not use the empty space on the paper for workings.

Allow 50 minutes per test. On average, they will have one minute to answer each question, so encourage them to move on from questions they are stuck on before too much time is wasted. Your child may find it helpful to put a cross in pencil by questions that have been missed out so that they can be quickly spotted later on. Remind them that they can always go back at the end if they have time left. Finish reading the instructions together before you 'start the clock'.

When the time is up they should stop writing. If they have not finished, draw a line at the point they have reached. You can always allow them to continue after the time to get more practice, or else leave the remaining questions for another time. Encourage them to think about whether they should try to speed up, or to work more carefully, depending on how they finish the paper.

Using the multiple-choice answer booklet

If your child is sitting a multiple-choice exam it is crucial that they understand how to use the answer booklet properly. Spend time examining the booklet together. As you look through it explain that multiple-choice answer sheets are usually scored by computer rather than by hand, (an optical reader scans the marks on each page). As a result, an answer will be classed as wrong if it is not clearly and accurately marked.

There are some common mistakes that are easy to make when using a multiple-choice answer booklet. Talk through the following points carefully with your


child, without panicking them, but so that they understand exactly what they should / should not do:

- **Marking outside the box.** To record an answer, a clear line should be made through the centre of the relevant answer box. The line should stay within the border of the box so that it can be read accurately by the computer.
- **Crossing out an answer.** If your child wants to change their mind they must never cross out an answer in a multiple-choice booklet. It must be fully rubbed out and then the new answer should be clearly marked in the appropriate box. If any mark is left in the first box, the computer could read two answers for that question and mark their response as incorrect.
- **Marking an answer in the wrong grid.** Answer grids often look the same on multiple-choice answer sheets so it is easy to mark an answer in the wrong grid, which can have a knock-on effect for all successive answers. Encourage your child to check that the question number of the grid matches the question they are answering before they make each mark. They should also take extra care if they decide to miss out a question to return to later.
- **Not pressing hard enough.** If a mark is too light, it may not be recognised by the computer and the question could be marked wrong. Remind your child that each answer needs to be marked clearly. We would suggest practising with soft HB pencils as they tend to make the clearest marks. If your child has to provide their own pencils for the actual test, make sure they take one or two HB pencils with them.

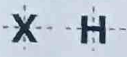
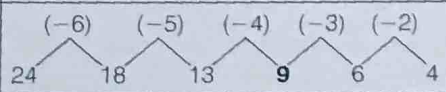

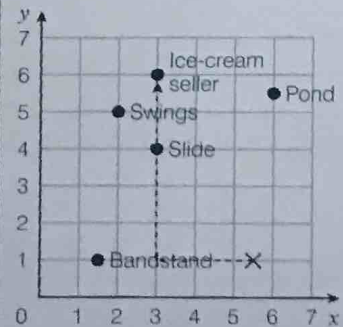
Marking and feedback


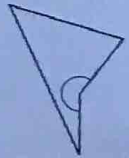
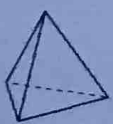
The answers that follow should be given one mark unless otherwise indicated. Do not take marks away for wrong answers, but do not award half marks. You will end up with a score out of 50. Double the score to get a percentage out of 100. 43/50 exceeds the target score of 85% (see 'The secrets of 11+ success in maths' booklet).

After marking, follow these steps:

- **Go over any incorrect answers.** Always go over incorrect answers so that your child can see what went wrong. To help with this process, each answer in these test papers is explained and also has an individual tutorial reference icon: . This icon links to the relevant section in **How To Do 11+ Maths** so your child can read more about the related topic and complete more practice questions if needed.
- **Use the Next Steps Planner inside the back cover.** This will provide a plan for what to do next when a test has been marked.

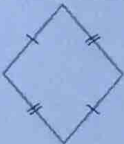
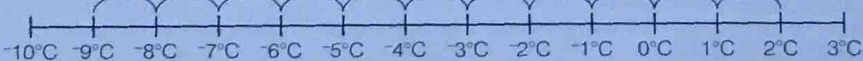


Test 1

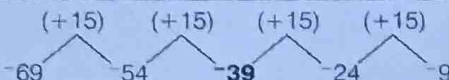

Question number	Answer		
1	C	$457.9 \div 1000 = 0.4579$. Every digit moves three positions to the right.	B1
2	B	285.9 is rounded up to 290.	B1
3	C	The angles inside a triangle add up to 180° . Therefore $56^\circ + 23^\circ = 79^\circ$ $180^\circ - 79^\circ = 101^\circ$	B18
4	C	$25\,000 - 18\,789 = 6211$	B2
5	E	The letter H also has two lines of symmetry. 	B24
6	C	6 represents 6 hundred thousand. 8 represents millions, 6 represents hundred thousands, 9 represents ten thousands, 7 represents thousands, 5 represents hundreds, 4 represents tens and 1 represents units.	B1
7	C	The numbers 42 (7×6), 60 (10×6) and 90 (15×6) are all in the 6 times table.	A3/B3
8	C	Aimee's dad's birthday is on a Wednesday (2 nd April). In a leap year, February has 29 days.	B4
9	B	$t = 2(4 \times 9) + 8$ $= 2 \times 36 + 8$ $= 72 + 8$ $t = 80$	B8
10	E	The triangular prism is the odd one out because it is the only shape with parallel lines.	B21
11–12	E	The largest area is $15\text{ cm} \times 14\text{ cm} = 210\text{ cm}^2$	B20
	B	The shortest perimeter is $17\text{ cm} + 17\text{ cm} + 9\text{ cm} + 9\text{ cm} = 52\text{ cm}$	B20
13	E	1 litre = $1\frac{3}{4}$ pints $4 \times 1\frac{3}{4}$ pints = 7 pints	B25
14	C		B7
15	D	This is the net of a cylinder. 	B21
16	E	Volume = length \times width \times height $6\text{ cm} \times 6\text{ cm} \times 6\text{ cm} = 216\text{ cm}^3$	B22
17	C	$3 = \frac{300}{100}$ $+ 0.7 = \frac{70}{100}$ $+ 0.09 = \frac{9}{100} = \frac{379}{100}$	B11
18	E	A prime number only has two factors: 1 and itself (so 1 is not a prime number).	B6
19	E	The mode is the value that occurs most frequently in a set of data. The mode is size 9 as it appears 6 times.	B15
20–21	E	Ice-cream seller	B23
	B		B23

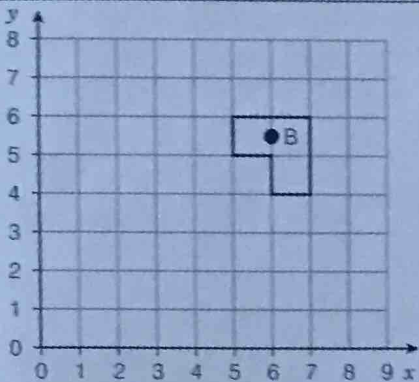

Question number	Answer		
22	C	The radius is a straight line from the middle of a circle to the outside edge.	
23	C	Reverse the problem. $59 + 13 = 72$, $72 \div 6 = 12$	B17 B4
24	D	Range = highest value - lowest value = $136 - 132$ = 4	B15
25-26	D	$1116 \text{ apples} \div 12 \text{ apples per bag} = 93 \text{ bags}$	B3
	E	Assuming that all the bags are sold as part of the 'buy 2 get 1 free' offer, the customer is paying £6 per 3 bags. $93 \text{ bags} \div 3 = 31$ $31 \times £6 = £180$	B4
27	C	1 tonne = 1000 kilograms so 6.25 tonnes = 6250 kilograms $6250 \text{ kilograms} \div 500 \text{ kilograms} = 12.5$, which means the truck had to be loaded 13 times.	B3
28	E	$2.86 \text{ m} = 286 \text{ cm}$ $286 \text{ cm} \div 13 \text{ girls} = 22 \text{ cm each}$	B3
29	D	50 divided by 125 = 0.4 (or $\frac{4}{10}$ or $\frac{2}{5}$) 50 pencils = $\frac{2}{5}$ (amount given out by Nazar) 75 pencils are left in the box = $\frac{3}{5}$	B10
30	C	$23 + 0.5 = 23.5$	B11
31	A	$-11^{\circ}\text{C} + 5^{\circ}\text{C} = -6^{\circ}\text{C}$	B6
32	B	$4^2 + 6^2 = 52$ $16 + ? = 52$ $16 + 36 = 52$ $\sqrt{36} = 6$	B6
33	D	Shape D is the only shape that has one angle larger than 90° . 	B17
34	B	$\frac{1}{6} \div 3$ = $\frac{1}{6} \div \frac{3}{1}$ = $\frac{1}{6} \times \frac{1}{3}$ = $\frac{1 \times 1}{6 \times 3}$ = $\frac{1}{18}$	B10
35	B		B21
36	A	$5.5 + 7.28 + 12.1 + 4.95 = 29.83 \text{ miles}$	B2
37	C	$72 \div 5 = 14.4 = 14\frac{4}{10}$ or $14\frac{2}{5}$	B3/B10
38-40	C	Thursday is 0.8 mm from 2.3 mm and so closest to average.	B14
	E	If average rainfall in April is 2.3 mm per day: $2.3 \times 7 = 16.1 \text{ mm}$ Total in this week = 21.0 mm Thus rainfall is 'above average'	B14
	D	21 mm divided by 7 days = 3.0 mm 4 days had more than 3.0 mm	B15
41	D	$6.3 \div 3 = 2.1$	B11
42	A	There are 33 children in the class but Hussain can't answer the question himself so the fraction will be from 32 children. $\frac{1}{8}$ of 32 = $32 \div 8 = 4$ So $\frac{1}{8} = 4$ $\frac{5}{8} = (5 \times 4)$ $\frac{5}{8} = 20$	B10

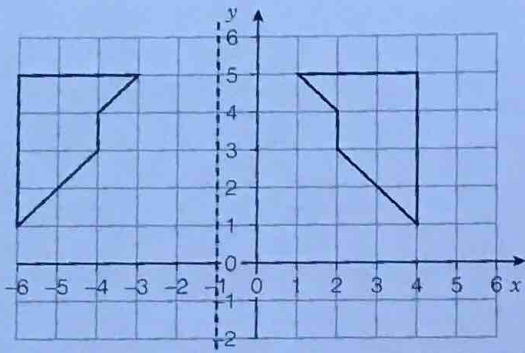
Question number	Answer		
43-45	C	The pie chart shows $\frac{1}{4}$ of the newspapers are <i>Times</i> deliveries. $\frac{1}{4}$ of 120 is 30 newspapers.	B14
	A	The pie chart shows that the <i>Mail</i> and <i>Mirror</i> deliveries make up $\frac{1}{4}$ of the deliveries, which equals 30 newspapers. However the <i>Mirror</i> is $\frac{1}{3}$ of the 30 newspapers (the <i>Mail</i> deliveries are double that of the <i>Mirror</i>), therefore only 10 <i>Mirror</i> newspapers are delivered.	B14
	D	20 customers read the <i>Mail</i> . $\frac{20}{120} = \frac{2}{12} = \frac{1}{6}$	B14
46	B	$\text{£}368 \times 18 = \text{£}6624$	B3
47-48	D	2400 = 100% 1200 = 50% 600 = 25%	B12
	D	12.5% is the answer, as half of the 25% chose swimming.	B12
49	B	The time totalled $112 + 23 + 125 + 5 = 265$ minutes. 5 hours = 300 minutes 300 minutes - 265 minutes = 35 minutes	B27
50	C	If the opposition had scored 12 goals, the fan had to take off $12 \times \frac{1}{2}$ miles = 6 miles from the total number of goals scored. Therefore Manchester United must have scored $8 + 6 = 14$ goals.	B4

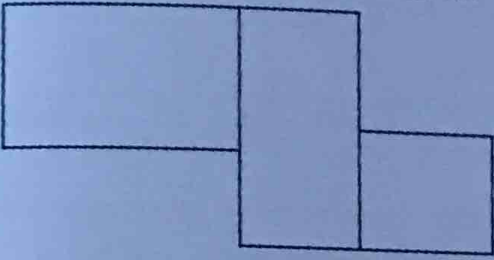


Test 2


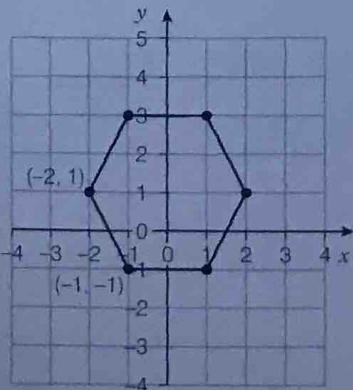
1	B	A factor is a whole number that divides exactly into another number. 8, 6 and 4 all divide exactly into 48.	B5
2	C		B19
3	B	3453.0 because out of the two numbers that include thousands, it is larger than D by 2.7.	B11
4	A	The weight closest to the average car is 2 tonnes. 1 tonne = 1000 kg B, C and D are far too light, E is far too heavy.	B25
5	D	$2^{\circ}\text{C} - 11^{\circ}\text{C} = -9^{\circ}\text{C}$ 	B6
6	E	10 adults take 4 children each = 40 children 52 children still need transport i.e. 52 divided by 4 = 13	B3
7-8	A	 The diameter is a straight line through the centre point of a circle, from one side to the other.	B17
	C	 The circumference is the total distance around the edge of a circle.	B17
9	B	$\begin{array}{r} 56.89 \\ + 21.37 \\ \hline 78.26 \end{array}$	B11
10	D	53 is the only prime number between 48 and 58. 47 is a prime number but the clue states that the number is 'larger than' 47.	B6
11	B	$34 \times 16 = 544$	B3
12	B	These are the fractions written as equivalent fractions. It makes it easier to compare the fractions. $\begin{array}{ccccc} \frac{1}{10} & \frac{1}{4} & \frac{6}{20} & \frac{2}{5} & \frac{5}{10} \\ \frac{2}{20} & \frac{5}{20} & \frac{6}{20} & \frac{8}{20} & \frac{10}{20} \end{array}$	B10
13	C	$\text{£}24.38$ is rounded down to $\text{£}24.00$.	B1
14	D	21 22 23 24 25 26 27 28 29	B15


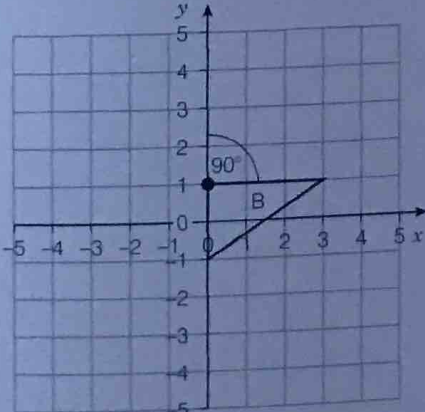
Question number	Answer																														
15	D	$\begin{array}{r} \frac{4}{4} = 1 \\ + \frac{3}{4} = 0.75 \\ \hline \frac{7}{4} = 1.75 \end{array}$	B11																												
16-17	A	$£1.36 + £1.48 + £3.65 + £0.58 = £7.07$	B2																												
	E	$£7.07 + £2.45 = £9.52$ (cost of shopping and magazine) $£10.00 - £9.52 = £0.48$ (change from £10.00)	B2																												
18	D	The square root of 64 is 8 because $8 \times 8 = 64$	B6																												
19	B		B7																												
20	A	$35.5 \text{ g} \times 100 = 3550 \text{ g}$	B1																												
21	A	The arch lines in this shape are parallel, as they are an equal distance apart and will never meet if continued on.	B17																												
22-24	C	Tara and Tim read 14 books. Amy read $\frac{3}{7}$ this amount. $\frac{1}{7}$ of 14 = 2 books so $\frac{3}{7} = 6$ books.	B10/B14																												
	B	The total of books read by Green group is found by adding all the individual totals of the group together (including Amy's): $10 + 12 + 4 + 16 + 6 = 48$ books. The average is found by dividing 48 books by 5 children = 9.6 books.	B14/B15																												
	A	In Term 1, the group had read 48 books. An increase to 58 books meant that someone had read 10 more books than in the previous term, therefore Tara must have doubled the 10 books she read in Term 1 to 20 books in Term 2.	B14																												
25	E	This is the net of a closed cube (B is the net of an open cube). 	B21																												
26	B	$6 \text{ h} \times 60 \text{ min} = 360 \text{ min}$ $5 \text{ min} + 20 \text{ min} + 360 \text{ min} = 385 \text{ min}$	B27																												
27	D	$-7^{\circ}\text{C} - 8^{\circ}\text{C} = -15^{\circ}\text{C}$	B6																												
28	E	$4(3 \times 6) = 4 \times 18$ $= 72$	B3																												
29	A	$15 \times \frac{3}{4} = 11\frac{1}{4}$	B10																												
30-31	C	2.8 litres = 2800 millilitres $2800 \text{ millilitres} \div 20 \text{ millilitres} = 140 \text{ drinks}$	B22																												
	B	$140 \text{ drinks} \times 15\text{p} = 2100\text{p}$ or £21.00	B3																												
32	B	Mean = the sum of items divided by the number of items $23 + 21 + 25 + 28 + 31 + 28 + 26 = 182$ $182 \div 7 \text{ days} = 26^{\circ}\text{C}$	B15																												
33	E	<table><tr><td>length</td><td>\times</td><td>width</td><td>\times</td><td>height</td><td>$=$</td><td>volume</td></tr><tr><td>5 cm</td><td>\times</td><td>3 cm</td><td>\times</td><td>? cm</td><td>$=$</td><td>150 cm³</td></tr><tr><td>15 cm</td><td></td><td></td><td>\times</td><td>? cm</td><td>$=$</td><td>150 cm³</td></tr><tr><td>15 cm</td><td></td><td></td><td>\times</td><td>10 cm</td><td>$=$</td><td>150 cm³</td></tr></table>	length	\times	width	\times	height	$=$	volume	5 cm	\times	3 cm	\times	? cm	$=$	150 cm ³	15 cm			\times	? cm	$=$	150 cm ³	15 cm			\times	10 cm	$=$	150 cm ³	B22
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15 cm			\times	10 cm	$=$	150 cm ³																									
34	C	2848 divided by 32 = 89; so 2848 divided by 89 = 32	B3																												
35	E	Helen has to wait 10 months out of 12 months ($\frac{10}{12}$). $\frac{5}{6}$ is an equivalent fraction of $\frac{10}{12}$	B10																												
36	A	1 isn't a prime number as it has only one factor, 1. Prime numbers have two factors, 1 and the number itself.	B6																												
37-38	D	Perimeter = the total distance around the playground $42 \text{ m} + 25 \text{ m} + 11 \text{ m} + 12 \text{ m} + (42 \text{ m} - 11 \text{ m}) + 13 \text{ m} = 134 \text{ m}$	B20																												
	A	The area of the original playground is 403 m ² . The area of the new playground is 275 m ² . So the difference between the two is 128 m ² .	B20																												
39	B	<table><tr><td>100%</td><td>$=$</td><td>16 games</td><td></td></tr><tr><td>50%</td><td>$=$</td><td>8 games</td><td></td></tr><tr><td>25%</td><td>$=$</td><td>4 games</td><td></td></tr><tr><td>50%</td><td>$+$</td><td>25%</td><td>$= 75\%$</td></tr><tr><td>8 games</td><td>$+$</td><td>4 games</td><td>$= 12 \text{ games}$</td></tr></table>	100%	$=$	16 games		50%	$=$	8 games		25%	$=$	4 games		50%	$+$	25%	$= 75\%$	8 games	$+$	4 games	$= 12 \text{ games}$	B12								
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50%	$+$	25%	$= 75\%$																												
8 games	$+$	4 games	$= 12 \text{ games}$																												

Question number	Answer		
40	D	For every 7 children, 2 are brown-eyed. There are 4×7 children in 28 children, so $2 \times 4 = 8$ 8 children are brown-eyed, 20 are blue-eyed.	B13
41-42	D	Congruent shapes are identical to each other but are positioned in different directions. Shape F is congruent to Shape D.	
	B		B23
43	B	$2.3 \text{ kg} = 2300 \text{ g}$ $110 \text{ guests} \times 15 \text{ g} = 1650 \text{ g}$ $2300 \text{ g} - 1650 \text{ g} = 650 \text{ g}$	B25
44-46	C	19 children were silent for 21-30 minutes.	B14
	E	$3 \text{ children (1-10 minutes)}$ $+ 9 \text{ children (11-20 minutes)}$ $+ 19 \text{ children (21-30 minutes)} = 31 \text{ children}$	B14
	D	$16 \text{ children (31-40 minutes)} + 11 \text{ children (41-50 minutes)} = 27 \text{ children who were silent for more than 30 minutes.}$ $27 \text{ children} \times \text{£}3.50 = \text{£}94.50$	B14
47	C	$\text{£}9.72 \text{ is } 90\% \text{ of original price}$ $1\%: \text{£}9.72 \div 90 = \text{£}0.108$ $100\%: \text{£}0.108 \times 100 = \text{£}10.80$	B12
48	D	$1 \text{ oz} \approx 30 \text{ g}$ so $5 \text{ oz} \approx 150 \text{ g}$	B25
49	C	Median = middle value of the data After these times are laid out in order 11.7 s is the time that is found in the middle of the data.	B15
50	D	The angles around a point add up to 360° . Therefore $83^\circ + ?^\circ = 360^\circ$ $83^\circ + 277^\circ = 360^\circ$	B17
Test 3			
1	D	2.2 2.21 2.22 2.23 2.24 2.25 2.26 2.27 2.28 2.29 2.3	B11
2	B	Square numbers = 1, 4, 9 (3^{rd}), 16, 25, 36 (6^{th})	B6
3	D		B24
4	C	$(2b) + a = c$ $(2 \times 12) + 7 = c$ $24 + 7 = 31$	B8
5	A	A decade = 10 years If the first year is a leap year, there are 3 leap years in the decade. $(3 \times 366 \text{ days}) + (7 \times 365 \text{ days}) = 3653 \text{ days}$	B4
6	D	$5 \times 35 = 175$ $4 \times 38 = 152$ $2 \times 42 = 84$ $1 \times 25 = 25$ Total = 436 children	B3
7	B	The left side equals 3 oz, the right side equals $80 \text{ g} + ?$ $3 \text{ oz} \approx 90 \text{ g}$ therefore the missing weight is 10 g.	B25

Question number	Answer		
8	E	Median = middle value of the data After these weights are put in order 29 g and 31 g are found in the middle of the data; the middle value is halfway between these weights, therefore 30 g is the median.	B15
9	D	Sequence = 1, 7, 8, 15, 23, 38	B7
10-11	B	This line is the mirror line for the two shapes as they are a direct reflection of each other. 	B23
	A	Coordinate of point S is (-6, 1).	B23
12	C	$a = 18$ $a + b = 4b - b$ $a + 9 = 4 \times 9 - 9$ $a + 9 = 36 - 9$ $a + 9 = 27$ $18 + 9 = 27$	B8
13	D	The factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18 and 36	B5
14	C	2:7 is same as ratio 1:3.5 Therefore there are 3.5 times more dogs i.e. 18 cats \times 3.5 = 63 dogs	B13
15	D	89952 is rounded up to 90 000.	B1
16	D	The parallelogram is the odd one out as it is the only shape without perpendicular lines.	B19
17	A	Original price = £35.00, sale price = £35.00 - 20% 20% of 35 = $\frac{20}{100} \times 35 = 7$ Jeremy paid £35.00 - £7.00 = £28.00	B12
18	D	8 kilometres \approx 5 miles so 88 kilometres \approx 55 miles	B25
19	B	Shape B is the correct answer because it is the only shape that has moved 180° about the vertex highlighted.	B23
20	C	$345 \div 23 = 15$ $345 \div 15 = 23$	B3
21	B	$\frac{13}{10}$ is the same as $\frac{10}{10} + \frac{3}{10} = 1.0 + 0.3 = 1.3$	B11
22	C	The angles on a straight line add up to 180°. Therefore $93^\circ + 69^\circ = 162^\circ$ $180^\circ - 162^\circ = 18^\circ$	B17
23	D	length \times width \times height = volume 6 cm \times 3 cm \times 4 cm = 72 cm ³	B22
24	A	Total = 123 minutes + 105 seconds = 2 hours 3 minutes + 1 minute 45 seconds = 2 hours, 4 minutes + 45 seconds	B27
25	D	The digit 8 represents the hundredths in the number.	B1

Question number	Answer		
26-27	E	Perimeter = the total distance around the shape. $44\text{ cm} + 15\text{ cm} + 17\text{ cm} + 15\text{ cm} + 32\text{ cm} + 12\text{ cm} + 29\text{ cm} + 18\text{ cm} = 182\text{ cm}$	B20
	B	One way of finding the area of this shape is to cut it into rectangles. The area of each rectangle then needs to be found and the totals added together, e.g. $29\text{ cm} \times 18\text{ cm} = 522\text{ cm}^2$ $15\text{ cm} \times 30\text{ cm} = 450\text{ cm}^2$ $17\text{ cm} \times 15\text{ cm} = 255\text{ cm}^2$ Total = 1227 cm^2 	B20
28	E	$12\,569 \div 1000 = 12.569$ $\frac{1}{2}$ of $12.569 = 6.2845$	B1/B11
29	B	Mode = value that occurs most frequently The number 3 is thrown 9 times.	B15
30	C	A prime number is a whole number that only has two factors, 1 and itself.	B6
31-32	C	Mersham to Tugwest to Danrek to Jutsford $4.3 + 10.9 + 3.67 = 18.87$ miles	B25
	B	$17.23 - 8.91 = 8.32$	B25
33	A		B21
34	C	$1000\text{ millilitres} = 1\text{ litre}$ so $200\text{ millilitres} = 0.2\text{ litres}$	B25
35	D	Reverse the problem. $50 \div 2 = 25$, $25 - 17 = 8$, $8 \times 4 = 32$	B4
36-38	C	Range = highest value - lowest value $= 45 - 25$ $= 20$	B15/B14
	D	On Thursday 30 out of 90 children had packed lunch. This is $\frac{1}{3}$ of the school therefore $\frac{2}{3}$ must have had a different kind of lunch.	B14/B10
	B	To find the average, add the total number of packed lunches eaten over the week: $25 + 33 + 45 + 30 + 42 = 175$ packed lunches Then divide by the number of days: $175\text{ lunches} \div 5\text{ days} = \text{an average of } 35\text{ packed lunches are eaten each day.}$	B14/B3
39	B	$\frac{1}{6}$ $\frac{1}{3} \times \frac{1}{2}$ $= \frac{1}{3} \times \frac{1}{2}$ $= \frac{1}{6}$	B10
40	A	-9 is the lowest number and 9 the highest, therefore the difference is 18.	B6
41	E	$4589 \div 100 = 45.89$ This means that, without dividing any tins or packets, the families each received 45 items.	B3/B4
42	D	$\frac{3}{25} \xrightarrow{\times 4} \frac{12}{100}$	B10
43	E	4 weeks = 28 days $127\text{ sandwiches per day} \times 28\text{ days} = 3556\text{ sandwiches}$	B3/B4
44	B		B19
45-46	E	$23 \times \text{£}1.25 = \text{£}28.75$	B3
	A	$\text{£}45.00 - \text{£}28.75 = \text{£}16.25$	B2

Question number	Answer		
47-49	D	The graph shows that at 40 minutes Kyle had travelled approximately 18 miles, therefore < 20 miles is the correct answer.	B14
	B	The graph shows two occasions when time passed but the car moved no distance, once at 29-30 minutes and the other time at 40-43 minutes.	B14
	C	The graph shows that Kyle travelled approximately 7 miles during this period of time.	B14
50	D	The time 21 hours 49 minutes needs to be divided into 7 equal parts. $\frac{1}{7} = 3 \text{ hours } 7 \text{ minutes}$ $\frac{2}{7} = 6 \text{ hours } 14 \text{ minutes}$	B10
Test 4			
1	E	$-12^{\circ}\text{C} - 7^{\circ}\text{C} = -19^{\circ}\text{C}$	B6
2	C	6 069 609	B1
3	D	A perpendicular line is a line drawn at 90° . The two lines that meet at the bottom of the heart shape are perpendicular. 	B17
4	C	1000 grams = 1 kilogram so 350 grams = 0.35 kilograms	B25
5	D	These are the fractions written as equivalent fractions. It makes it easier to compare the fractions. $\frac{6}{3} \quad \frac{7}{6} \quad \frac{5}{6} \quad \frac{2}{3} \quad \frac{1}{2}$ $\frac{12}{6} \text{ (or 2)} \quad \frac{7}{6} \text{ (or } 1\frac{1}{6}) \quad \frac{5}{6} \quad \frac{4}{6} \quad \frac{3}{6}$	B8
6	A	$\pounds 282\,000 \div 12 \text{ people} = \pounds 23\,500$	B3
7-9	C	$12 \text{ (1 lamb)} + 15 \text{ (2 lambs)} + 7 \text{ (3 lambs)} + 1 \text{ (4 lambs)} = 35 \text{ ewes}$	B14
	E	15 ewes gave birth to twins, 7 ewes gave birth to triplets. So 15 ewes - 7 ewes = 8 more ewes gave birth to twins.	B14
	D	Number of ewes \times Number of lambs $\begin{array}{rclcl} 12 & \times & 1 & = & 12 \\ 15 & \times & 2 & = & 30 \\ 7 & \times & 3 & = & 21 \\ 1 & \times & 4 & = & 4 \\ \hline 12 + 30 + 21 + 4 & = & 67 \text{ lambs} \end{array}$	B14
10	C	$34 - 15 = 19$ 19 is a prime number because it has only two factors (1 and 19).	B6
11-12	D	$12 \times 0.43 = \pounds 5.16$ $\pounds 5.16 \div 2 = \pounds 2.58 \text{ (2nd pack } \frac{1}{2} \text{ price)}$ Total = $\pounds 7.74$	B4
	A	The third pack of 12 tins would be the original price so, $\pounds 5.16 \text{ (1st pack)}$ + $\pounds 2.58 \text{ (2nd pack } \frac{1}{2} \text{ price)}$ + $\pounds 5.16 \text{ (3rd pack)}$ = $\pounds 12.90$	B4
13	C		B23

Question number	Answer		
14	B	The order of rotational symmetry is how many times a shape fits into its outline during one full turn. An oblong has a rotational symmetry of 2.	B23
15	E	Volume = length \times width \times height $10 \text{ cm} \times 4 \text{ cm} \times 4 \text{ cm} = 160 \text{ cm}^3$	B22
16	B	Mean = the sum of items divided by the number of items $12 + 18 + 16 + 15 + 17 + 13 + 21 = 112$ $112 \text{ (total number of eggs)} \div 7 \text{ (days)} = 16 \text{ (mean)}$	B15
17	A	$\begin{array}{r} 3 \overline{) 18} \\ \underline{\times 6} \\ 18 \\ \hline 30 \end{array}$	B10
18	B	$378.4 \text{ miles} - 198.7 \text{ miles} = 179.7 \text{ miles}$	B2
19	C	$3^3 = 3 \times 3 \times 3 = 27$	B6
20	D	Both 84 and 98 are in the 7 times table, therefore they are both multiples of 7.	B5
21	D	a day = 24 hours ($\times 60$ minutes) = 1440 minutes ($\times 60$ seconds) = 86 400 seconds	B4
22	D	The perimeter is 34 cm which is the shortest.	B20
23	C	A = 280, B = 180, C = 420, D = 412.5, E = 160, therefore C is the answer.	B10/B12
24	C	Range = highest value - lowest value $= 56 - 27$ $= 29$	B15
25	C	$\frac{4}{100}$ is the same as 0.04	B11
26	B	11.9 seconds is the quickest time.	B11
27	B	$5.21 \times 1000 = 5210$. Every digit moves three positions to the left.	B1
28	B	$278 \text{ miles} \times 54 \text{ petrol refills} = 15\,012 \text{ miles}$	B4
29	D	$\begin{aligned} \frac{7}{16} \\ \frac{1}{8} + \frac{1}{16} + \frac{1}{4} \\ = \frac{2}{16} + \frac{1}{16} + \frac{4}{16} \\ = \frac{7}{16} \end{aligned}$	B10
30	E	Area of a right-angled triangle = $\frac{1}{2}$ area of the surrounding rectangle  Area of rectangle = $15 \text{ cm} \times 5 \text{ cm} = 75 \text{ cm}^2$ $\frac{1}{2}$ of $75 \text{ cm}^2 = 37.5 \text{ cm}^2$	B18
31-32	A	£180 $£4680 \div 26 = £180$	B3
	B	£520 $26 \times £160 = £4160$ $£4680 - £4160 = £520$	B4
33	D	$0.39 \times 100\% = 39\%$	B12
34	C	This is the definition of a prism.	B21
35	B	Shape B is the correct answer because it is the only place where the shaded shape that has rotated 90° clockwise about the vertex marked with the dot. Shape C is a 90° anticlockwise about the same vertex. 	B23

Question number	Answer		
36	C	Reverse the problem. $70 + 11 = 81$, the square root of 81 is 9, $9 - 6 = 3$	B4
37	D	34.644 g rounded to the nearest tenth is 34.6 g	B1
38	A	The angles around a point add up to 360° . Opposite angles when straight lines cross are the same. Therefore $122^\circ + 122^\circ = 244^\circ$ $360^\circ - 244^\circ = 116^\circ$ $116^\circ \div 2 = 58^\circ$	B17
39	B	The common factor is 3 therefore 9 : 24 can be written 3 : 8.	B13
40	D	$8.09 + 15.68 = 23.77$	B11
41	B	The new shape made is a rectangle. A rectangle has 2 lines of symmetry.	B24
42	E	Sequence = -8, 0, 8, 16, 24, 32	B7
43-44	C	Of the areas given, only oblongs with an area of 84 cm^2 , 75 cm^2 or 36 cm^2 can have a perimeter of 40 cm. <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 2px;">6 cm</div> <div style="border: 1px solid black; width: 100px; height: 40px; margin: 5px auto;"></div> <div style="border: 1px solid black; padding: 2px;">14 cm</div> </div> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 2px;">5 cm</div> <div style="border: 1px solid black; width: 100px; height: 30px; margin: 5px auto;"></div> <div style="border: 1px solid black; padding: 2px;">15 cm</div> </div> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 2px;">2 cm</div> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px auto;"></div> <div style="border: 1px solid black; padding: 2px;">18 cm</div> </div> </div>	B20
	D	If the length is 13 cm, the width will be 7 cm, giving an area of 91 cm^2 .	
45	C	$12d = 33 + d$ $12 \times 3 = 33 + 3$	B8
46	A	$1.8 \text{ gallons} + 1.2 \text{ gallons} = 3 \text{ gallons}$ $1 \text{ gallon} = 8 \text{ pints}$ so 3 gallons = 24 pints	B25
47-49	A	There are 118 birds of other types ($3 + 47 + 10 + 15 + 43 = 118$). 150 birds were surveyed. $150 \text{ birds} - 118 \text{ birds} = 32 \text{ birds}$	B14
	B	$150 \text{ birds} = 100\%$ therefore 15 birds = 10%	B12
	C	50% of 150 birds = 75 birds The total of the sparrows (32 birds) and the robins (43 birds) equals 75 birds.	B14/B12
50	C	$y^2 < 6z - 8$ $y^2 < 6 \times 6 - 8$ $y^2 < 28$ $5^2 < 28$ $25 < 28$ Each of the other values gives an answer greater than 28 when squared so $y = 5$	B8