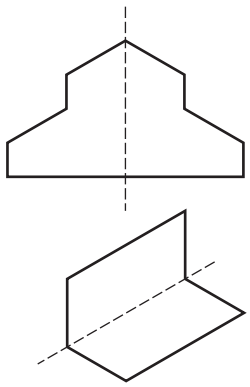
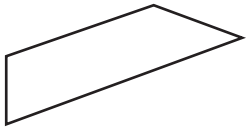
Practice Paper 1 answers

Pages 96–102 Practice Paper 1 (non-calculator)

Question	Mark	Correct response	Comments
1 a	1	08:03	
b	1	31 min	Work out 08:41 – 08:10
c	1	Doesn't stop, express bus	
2 a	1	48	Work out 100 – 52
b	1	4	Work out 100 ÷ 25
c	1	6	Work out 600 ÷ 100
d	1	30	First work out 35 x 2, then take the answer from 100.
3 a	1	D	
b	1	8	
c	1	8	
4 a	1 1	8.4 (cm) 5 (cm) or 5.0 (cm)	Work out 4.2 + 4.2 or 4.2 x 2 Work out 2.5 + 2.5 or 2.5 x 2
b	1	6	Find the number of times 2.5 goes into 15, so work out 15 ÷ 2.5
5	1 1		You can check your answers with a mirror or tracing paper. For diagonal mirror lines, it is easier to turn the page round until the mirror line is horizontal or vertical.
6	2 or 1	(£)140 Showing a correct method, e.g. (1040 – 200) ÷ 6	First work out 1040 – 200 = 840 to find the remainder, then each instalment is 840 ÷ 6 = 140
7	1	20 (cl)	1 litre = 100 centilitres, 100 ÷ 5 = 20
8 a	1	For example, 	Acute angles are less than 90° and obtuse angles are between 90° and 180°.
b	1	An acute angle is less than 90° and four times a number less that 90° must be less than 360°.	This is a Using and Applying maths question. In your answer, you must show that you know the sum of the angles in a quadrilateral is 360°.
9 a	2	80, 60%	Remember that a percentage means out of 100.
b	1	Any that work: 5 out of 100, 1 out of 20, etc.	

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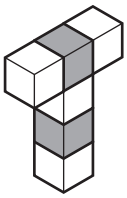
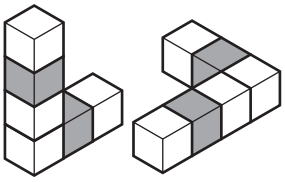
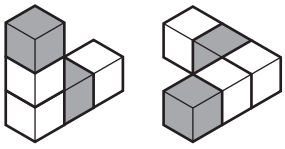
10 a	1	$\frac{12}{25}$	Your answers to this question must be written as a fraction. Answers such as 12 out of 25 or 12 in 25 or 12 : 25 are not acceptable.
b	1	$\frac{8}{25}$	
c	1	$\frac{20}{25}$ or $\frac{4}{5}$	20 chocolates are not white. You would not lose the mark if you did not cancel down the fraction.
11	2 or 1	(£)3.75 digits 3375 seen	Use a suitable method to work out 1.35 x 25, which is 33.75. The saving is 33.75 – 30 = 3.75
12 a	1 1	18 19	Work out 6 + (2 x 5) + 2 = 6 + 10 + 2 Work out (3 x 6) + 5 – (2 x 2) = 18 + 5 – 4 = 19
b	1	7	$a + b + c = 13$, so $d = 20 - 13 = 7$
13	1 1 1	$\frac{11}{12}$ $\frac{7}{12}$ $\frac{4}{12}$ or $\frac{1}{3}$	$\frac{1}{2} = \frac{6}{12}$ $\frac{1}{4} = \frac{3}{12}$ and $\frac{1}{3} = \frac{4}{12}$ $\frac{3}{4} = \frac{9}{12}$
14 a	1	x: 2, 4, 6 y: 7, **9**, **11**	The mapping $y = x + 5$ means add 5 to each x-value to get the y-value.
b	1	x: 2, 4, 6 y: 1, **5**, **9**	The mapping $y = 2x - 3$ means multiply each x-value by 2 and then subtract 3 to get the y-value.
c	1	$(y) = \frac{1}{2}x + 1$ or $(y) = x \div 2 + 1$	To get the y-value, you halve each x-value and then add 1.
15 a	1	(–3, –2)	
b	1	(–1, 0)	Draw the line AB to find the mid-point.
16 a	2 or 1	Cuboid B	The surface area of a cuboid is the total area of its 6 faces. A = 62 cm^2, B = 88 cm^2, C = 82 cm^2. You would get 1 mark for finding the correct surface area for two cuboids.
b	2 or 1	Cuboid C	The volume of a cuboid is $V = lwh$. A = 30 cm^3, B = 40 cm^3, C = 42 cm^3. You would get 1 mark for finding the correct volume for two cuboids.
c	1	1 (cm)	$V = 10 \times 3 \times h$, so $30 = 30h$ and $h = 1$
17 a	1	No. The sides are the same length, but the 4 angles are not 90°, or it is a rhombus.	
b	1	Yes. Two pairs of adjacent sides have the same length.	

Practice Paper 1 answers

Question	Mark	Correct response	Comments
c	1	No. It only has one pair of parallel sides, or it is a trapezium.	
18	1 1 1	–2 –4 –5	12 + (–2) = 10, since +(–) is the same as – 6 – (–4) = 10, since –(–) is the same as + –2 x (–5) = 10, since – x – = +
19	2 or 1	$\frac{1}{4}$ $\frac{6}{24}$ or $\frac{3}{12}$	To multiply fractions, multiply the numerators and the denominators. You would get 1 mark for not cancelling.
20	1 1 1	$(x) = 4$ $(y) = 5$ $(z) = 3$	$2x = 8$ (take 3 from both sides) $x = 4$ (divide both sides by 2) $3y – 6 = 9$ (multiply out brackets) $3y = 15$ (add 6 to both sides) $y = 5$ (divide both sides by 3) $2z – 4 = 2$ (take z from both sides) $2z = 6$ (add 4 to both sides) $z = 3$ (divide both sides by 2)
21 a	1	95 (kg), 12	Interpret the final entry in the diagram for the heaviest person. Count the number of entries in the last 3 rows for those over 70 kg.
b	1	83 (kg), 6	Those over 70 kg are in the last 2 rows.
c	1	76 (kg), 30 (kg)	The modal weight is the weight common to most members. The range is the difference between the heaviest weight and the lightest weight.
22	1 1	$x = 7 – y$ $w = z \div 3$ or $\frac{z}{3}$	Take y from both sides to make x the subject. Divide both sides by 3 to make w the subject.

Practice Paper 2 answers

Pages 103–109 Practice Paper 2 (calculator)

Question	Mark	Correct response	Comments
1 a	1	(£)104.99	Work out 85 + 19.99
b	1	(£)11.02	Work out 2 x 4.49 = 8.98, then 20 – 8.98
c	1	Yes (total is £94.48)	39.99 + 34.50 + 19.99 = 94.48
2 a	1	9	Work out 4 + 5
b	1	The bar should be drawn to 15	Work out what each section on the vertical axis is worth.
c	1 mark for 3 correct	Boys 12 4 Girls 8 4	Boys: 16 ÷ 4 are left handed Girls: 12 ÷ 3 are left handed
3	1 1	Millimetres Kilograms	
4 a	1	24 (cm^2)	You can count squares or work out the areas of different squares and rectangles.
b	1 1	8 cm^3	The cube is 2 cm by 2 cm by 2 cm. You need to show units if they are not given.
c	1	Any rectangle with correct area	Examples are 2 cm by 12 cm, 3 cm by 8 cm, 4 cm by 6 cm.
5 a	2 or 1	(£)49 Shows a correct method, e.g. 17.5 ÷ 100 x 280	There are many ways of working this out. $17\frac{1}{2}$% of 280 means 17.5 hundredths of 280. This can be calculated by 0.175 x 280 or 17.5 ÷ 100 x 280
b	2 or 1	5(%) Shows a correct method, e.g. 6 ÷ 120 x 100	The fraction is $\frac{6}{120}$ which cancels to $\frac{1}{20}$ You should know that $\frac{1}{20}$ is equivalent to 5%, or you can do the calculation 6 ÷ 120 x 100
6 a	1		All faces of the grey cube must be shaded.
b	2 or 1	For example,  For example, 	Any L-shape in any orientation will gain full marks. Any L-shape using 5 cubes in any orientation will gain one mark.

Practice Paper 2 answers

Question	Mark	Correct response	Comments
7 a	2 or 1	30 (people) 12 seen	84° is equivalent to 7 people, so 84 ÷ 7 = 12° is equivalent to 1 person. 360 ÷ 12 = 30
b	2 or 1	162 (degrees) 18 seen	20 people in a pie chart will get 360 ÷ 20 = 18° per person. 9 people will be an angle of 9 x 18 = 162°
8 a	1 1 1	12 or 16 15 17	The factors of 48 are: {1, 2, 3, 4, 6, 8, 12, 16, 24, 48}. You can give both answers. The factors of 150 are: {1, 2, 3, 5, 6, 10, 15, 25, 30, 50, 75, 150}. 'Between' means that you do not include 10 or 20. The factors of 51 are : {1, 3, 17, 51}.
b	1	'No' ticked and an explanation such as '150 is not in the 60 times table.'	You need to make it clear that you understand that a multiple is in the times tables so writing down 60, 120, 180, would just about do this.
9 a	1	110°	Be careful to choose the correct scale on your protractor.
b	2 or 1	250 (metres) 5 cm seen	Multiply the length of *BC* by 50.
10 a	1	12	The range is the difference between the highest and the lowest numbers. From –3 to 9 is a difference of 12.
b	1	20	The total of the negative numbers is –5. The total of the positive numbers is 25. 25 – 5 = 20
c	1	–1	The mode is the most common number.
d	1	1	The median is the middle number when the numbers are in order. These are already in order but there is an even number of values, so the median is midway between 0 and 2.
e	2 or 1	2.5 Showing a correct method, e.g. the total ÷ 8	The mean is the total of the numbers divided by how many numbers there are. The total is 20 and there are 8 values.
11 a	1	23 or 37 or 43 or 47	Prime numbers have no factors other than 1 and themselves. Only one answer is needed but you will not lose the mark if you give more than one.
b	1	25 or 36	Square numbers are numbers that can be written as 5 x 5 or 6 x 6, etc.
c	1	Because square numbers always have a factor other than 1 or itself.	You need to make it clear you know that square numbers can be written as a product such as 2 x 2, 5 x 5, etc.

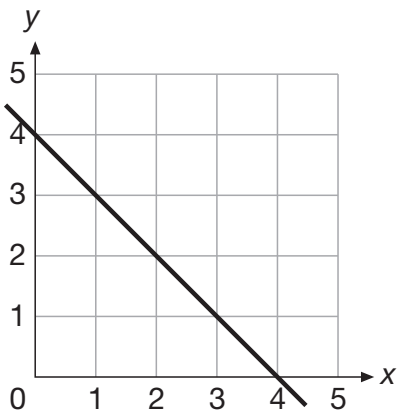
Practice Paper 2 answers

Question	Mark	Correct response	Comments
12 a	1	75 (degrees)	As the triangle is isosceles, the two base angles are the same. 180 – 30 = 150, 150 ÷ 2 = 75
b	1	135 (degrees)	There are 360° in the full turn. The total of the angles shown is 45 + 90 + 90 = 225. 360 – 225 = 135
13	3 or 2 or 1	(£)62.50 125 seen 1000 grams seen	This is a Using and Applying maths question. You have to convert 1 kg to grams (1000 grams), then divide 1000 by 8 (= 125). You then have to change 125 fifty pence coins into pounds.
14 a	2 or 1	Any three points on the line. Two points and the corresponding values.	The possible points are: (–2, –1), (–1, 0), (0, 1), (1, 2), (2, 3), (3, 4), (4, 5), (5, 6). You can read the coordinates from the graph.
b	1	$y = x + 1$	You should see that the second (y) coordinate is equal to 1 more than the first (x) coordinate.
c	1	A line parallel to $y = x + 1$ passing through (0, 3)	The line is parallel to the given line but passes through 3 on the y-axis rather than 1.
15	1 1	1694 3.5	Remember to include the bracket keys. Work out the numerator and denominator separately first.
16 a	1	219.8 to 220 (cm)	The formula for the circumference is $C = \pi d$ or $C = 2\pi r$.
b	2 or 1	2200–2300 digits 22 or 23 seen	5 kilometres is 5000 metres which is 500 000cm. 500 000 ÷ (π x 70) = 2273.64. The answer only has to be approximate, so you can round off.
17 a	1	29.4 (cm)	Work out 21 x 1.4
b	1	164 (mm)	Work out 229 ÷ 1.4
c	1	Yes folded paper is 210 mm x 147 mm	Work out 294 ÷ 2 and compare widths and heights.
18	2	Man City by 57 seats (Man Utd 2295, Man City 2352)	Work out 3.4 ÷ 100 x 67 500 and 4.9 ÷ 100 x 48 000
19	1	Yes 3 x (2 x 18.5 + 13) = 150, 76 + 4 x 18.5 = 150	Substitute x = 18.5 in each side of the equation.

Mental Test answers

Pages 110–111 Mental Mathematics Test

Each question is worth 1 mark each, giving you a total out of 30.

Question	Mark	Question	Mark
1	430	**20**	7
2	3 (m)	**21**	12 or 16
3	7	**22**	199
4	–10	**23**	
5	31		
6	2.25		
7	85 (km)		
8	Friday		
9	Circle		
10	(5, 3)		
11	10		
12	4.5		
13	$\frac{3}{4}$	**24**	9π (cm^2)
14	33% (33.3%, $33\frac{1}{3}$%)	**25**	12
15	48 (cm^2)	**26**	375–425
16	45	**27**	$x - 4$
17	475 (g)	**28**	$\frac{1}{3}$
18	0.5 x 0.3 x 0.2	**29**	Tetrahedron
19	10	**30**	55