Maths Mock Test Paper 24 Answers

Q#	Answer	Explanation
1	C	15 red apples is 3 lots of the 5-part, so the green apples are 3 lots of the 3-part: 3 × 3 = 9.
2	C	Multiply the two side lengths: 6 × 4 = 24 m².
3	A	The factors of 18 are 1, 2, 3, 6, 9 and 18, because each of them divides into 18 exactly. That is 6 numbers in all.
4	C	395 rounds up to 400 (tens digit 9 ≥ 5). 400 × 8 = 3,200. (The exact total is 3,160 m, but the estimate by rounding is 3,200 m.)
5	A	A parallelogram cannot be folded onto itself at all. Its diagonals look tempting, but folding along one does not match the two halves, so it has no lines of symmetry.
6	C	Three hundred thousand is 300,000. Adding twenty gives 300,020.
7	D	Each circle stands for 10 stickers. Cara has 4 circles, so she collected 4 × 10 = 40 stickers. Ben has 2 circles, so he collected 2 × 10 = 20 stickers. 40 − 20 = 20, so Cara collected 20 more.
8	D	Corner R is 6 squares across and 4 squares up, so its coordinates are (6, 4).
9	A	The spinner has 8 equal sectors: 4 red, 2 blue and 2 green. Blue covers 2 sectors, and 2 × 2 = 4, so the colour twice as likely as blue must cover 4 sectors. Red does. Green covers 2 sectors, the same as blue, and red or green together cover 6.
10	E	The hour hand is just past 10 and the minute hand points to the 1, so the clock shows 10:05. From 10:05 to 11:20 is 1 hour 15 minutes.
11	B	A square patio has the same number of tiles along each side, so we need the square root of 121. Since 11 × 11 = 121, there are 11 tiles along each side.
12	B	Midday is 12:00. The gaps are 70, 25, 40, 65 and 40 minutes, and the smallest of these is 25 minutes, so 11:35 is closest.

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13	D	To round to the nearest pound, look at the first decimal digit (6). Since 6 ≥ 5, we round up. £1,847.65 → £1,848.
14	A	Work backwards, undoing each step. Before the 2 was subtracted the number was 28 + 2 = 30, and 30 ÷ 3 = 10, so the third term is 10. Again, 10 + 2 = 12 and 12 ÷ 3 = 4, so the second term is 4. Once more, 4 + 2 = 6 and 6 ÷ 3 = 2, so the first term is 2.
15	C	There are 2 + 7 = 9 parts, so one part is 900 ÷ 9 = 100 ml. The juice is 2 parts, which is 2 × 100 = 200 ml.
16	B	In a parallelogram the opposite sides are equal and parallel, so the move from Q to R must be the same as the move from P to S. Going from Q(5, 1) to R(6, 4) is 1 square right and 3 squares up. The same move from P(1, 1) lands on (2, 4).
17	D	The hits are worth 3 × 5 = 15 points. The misses take away 4 × 8 = 32 points. Starting from 15 and taking away 32, the score 15 − 32 gives −17.
18	E	Angles that meet at a point add up to 360°. Taking away the angle that is given, 360 − 140 = 220 is shared equally between the two angles marked x. 220 ÷ 2 = 110, so each of them is 110°.
19	D	Work backwards by adding: 68 + 47 = 115. Check: 115 − 47 = 68.
20	A	The perimeter is twice the length plus twice the width, so the length and the width together come to 30 ÷ 2 = 15. The possible pairs give areas 1 × 14 = 14, 2 × 13 = 26, 3 × 12 = 36, 4 × 11 = 44, 5 × 10 = 50, 6 × 9 = 54 and 7 × 8 = 56. The largest of these is 56, so an area of 60 cm^2 is impossible.
21	B	15 pancakes is two and a half times as many as 6 pancakes, because 15 ÷ 6 = 2.5. Every ingredient must be multiplied by the same amount, so the milk needed is 200 × 2.5 = 500, which is 500 ml.
22	B	The two angles lie on a straight line, so x + 2x = 180°. That gives 3x = 180°, so x = 60°.
23	D	This is the lowest common multiple of 9 and 12. Multiples of 9: 9, 18, 27, 36. Multiples of 12: 12, 24, 36. They drip together after 36 seconds.

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24	C	Since 11 × 11 = 121, dividing 121 by 11 gives 11.
25	B	The notes come to 3 × 20 = 60 pounds and the coins add 4 pounds, while six 10p coins make 60p. Putting the columns together, 60 + 4 + 0.6 = 64.6, which is £64.60.
26	D	The lengths cannot be compared until they are all in the same unit. There are 1,000 metres in a kilometre, so Bell River is 2,600 m and Dee Water is 2,350 m. The four lengths are then 2,400 m, 2,600 m, 1,950 m and 2,350 m, and the longest of these is Bell River.
27	C	Ten per cent of £40 is 40 ÷ 10 = 4 pounds, and the tip is added to the bill rather than taken off. The total paid is 40 + 4 = 44 pounds.
28	A	The rectangle stretches equally either side of both axes, from −3 to 3 across and from −2 to 2 up, so its centre is exactly at the origin, (0, 0).
29	E	The choir circle covers two regions: the 11 pupils who are only in the choir, and the 4 pupils in the overlap who are in both clubs. 11 + 4 = 15, so 15 pupils belong to the choir. The 8 outside the circles belong to neither club.
30	B	The Shrewsbury arrivals are 08:35, 09:20, 10:05 and 10:50. The last one before 10:15 is 10:05, which is train C, and train C leaves Newport at 08:25.
31	C	Divide the bill by the number of people: £46 ÷ 4 = £11.50.
32	D	Each pattern uses 3 more tiles than the one before it, and pattern 1 uses 4, so a pattern uses 3 times its number plus one extra tile. Taking off that extra tile, 100 − 1 = 99, and 99 ÷ 3 = 33, so pattern 33 uses exactly 100 tiles.
33	E	Reading the bars, the cheetah reaches 110 km/h and the horse 70 km/h. The difference is 110 − 70 = 40 km/h.
34	C	Going back up undoes the fall, so add the 11 degrees on again. Counting up 11 from −4 reaches 7, so the temperature was 7°C.

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35	A	Rounding 4,762 to the nearest thousand gives 5,000, which adds 238 on. Rounding 2,381 gives 2,000, which takes 381 away. The estimate is 5,000 + 2,000 = 7,000, while the exact total is 4,762 + 2,381 = 7,143. The estimate is smaller because the 381 taken away is more than the 238 added on.
36	B	Average speed uses the whole distance and the whole time, not the separate hours. She travelled 50 km in 4 hours, so her average speed is 50 ÷ 4 = 12.5 km/h.
37	C	The parts take 2 hours and 3 hours, so the journey is 360 km in 5 hours, giving 360 ÷ 5 = 72 km/h.
38	B	From 08:30 to 17:45 is 9 hours 15 minutes, which is 555 minutes, so the five weekdays give 555 × 5 = 2,775 minutes. From 09:00 to 13:00 is 4 hours, which is 240 minutes. Altogether 2,775 + 240 = 3,015 minutes, and 3,015 ÷ 60 = 50.25, which is 50 hours and 15 minutes.
39	C	The journey home is the last part of the graph, where she covers 30 km between 3 hours and 5 hours, which is 2 hours of riding. Her speed is 30 ÷ 2 = 15 km/h.
40	B	Both orders contain three teas, so the difference between them is the price of one cake: 9.50 − 7.00 = 2.50, so a cake costs £2.50. Taking that off the second order leaves 7.00 − 2.50 = 4.50 for the three teas, so one tea costs 4.50 ÷ 3 = 1.50, or £1.50.
41	C	Each centimetre stands for 250 m, so the path is 250 × 3.4 = 850 metres. Dividing by 1,000 changes that into 0.85 kilometres.
42	A	The 8 sits in the hundred thousands column, so it is worth 800,000. The 7 sits in the tens column, so it is worth 70. Multiplying the two values, 800,000 × 70 = 56,000,000.
43	C	Division comes first, and a positive divided by a negative is negative, so 30 ÷ (−5) gives −6. Subtracting −8 is the same as adding 8, and counting 8 up from −6 reaches 2.
44	C	Use twelfths: 2 3/4 is 2 9/12 and 1 5/6 is 1 10/12. Since 10/12 is bigger than 9/12, take one whole from the 2, making 1 21/12. Then 1 − 1 = 0 wholes and 21/12 − 10/12 = 11/12.

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45	D	The area of the first rectangle is 12 × 8 = 96, so both rectangles cover 96 cm². The second rectangle is 16 cm long, so its width is 96 ÷ 16 = 6 cm. Its perimeter is the two lengths and the two widths together: 16 + 6 = 22, and 22 × 2 = 44, so the perimeter is 44 cm.
46	A	Angles a and e sit in matching positions at the two crossings, each above its own line and to the left of the slanting line, so they are corresponding angles and are always equal while the lines stay parallel. Angles b and c each make a straight line with a, so they are its supplement, and f and g are equal to b and c rather than to a.
47	E	Paying by the hour means the first hour and then four more hours: 4.50 + 3.00 + 3.00 + 3.00 + 3.00 = 16.50, so £16.50. The all-day ticket costs £16.00, which is less, so the least it can cost is £16.00.
48	C	The first three significant figures are 2, 9, and 9. The next digit is 5 (≥ 5), so we round up. The carry propagates through both 9s: 2,995,000 → 3,000,000.
49	D	The factors of 28 apart from itself are 1, 2, 4, 7 and 14. Adding them: 1 + 2 + 4 + 7 + 14 = 28, so 28 is a perfect number.
50	A	The pairs of whole numbers that multiply to give 84 are 1 and 84, 2 and 42, 3 and 28, 4 and 21, 6 and 14, and 7 and 12. Testing their totals, 7 + 12 = 19, so the two numbers are 7 and 12, and the larger of them is 12.

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