Maths Mock Test Paper 12 Answers

Q#	Answer	Explanation
1	E	As decimals: 1/4 = 0.25, 3/10 = 0.3, 7/20 = 0.35, 2/5 = 0.4 and 1/2 = 0.5. The largest is 1/2.
2	A	A prime number has exactly two different factors: itself and 1. The number 1 has only a single factor, which is 1, so it does not qualify. The first prime number is 2, which has the two factors 1 and 2.
3	E	Two minutes is 2 × 60 = 120 seconds, and adding the extra 30 gives 120 + 30 = 150 seconds.
4	A	Work in one unit: 1 m 25 cm is 100 + 25 = 125 cm. Cutting off 40 cm leaves 125 − 40 = 85 cm.
5	C	Go up from 1 hour to the line, then across to the distance axis. It reads 4, so Rosie had cycled 4 km.
6	C	Combining the place values: 8,000 + 0 + 40 + 1 = 8,041. The zero must be included as a placeholder in the hundreds column.
7	E	Look at the gaps between the terms: 9 − 5 = 4, 13 − 9 = 4 and 17 − 13 = 4. The same 4 is added every time, starting from 5.
8	C	593 rounds to 600 and 208 rounds to 200. 600 − 200 = 400. (The exact answer is 385, but the estimate by rounding is 400.)
9	B	The two arms form a perfect square corner, which is exactly 90°. An angle of 90° is called a right angle.
10	E	On a number line −6 sits to the left of −3, and numbers always get smaller towards the left. So −6 is the smaller number, even though the digit 6 is larger than the digit 3.
11	B	Find the Wednesday bar and read across to the scale. Its top is halfway between 20 and 40, which is 30 visitors.
12	B	Work from left to right: −11 + 4 = −7, then −7 − 6 = −13.

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13	D	The floor has an area of 5 × 4 = 20 m² and the rug covers 3 × 2 = 6 m², so the uncovered part is 20 − 6 = 14 m². As a fraction of the floor that is 14/20, which cancels to 7/10.
14	A	The order contains 8 × 24 = 192 books and the pupils are given 5 × 34 = 170 books. That leaves 192 − 170 = 22 books.
15	D	Angles on a straight line add up to 180°. There are 2 + 3 + 4 = 9 parts, so one part is 180 ÷ 9 = 20°. The largest angle is 4 × 20 = 80°.
16	C	The ride takes 30 ÷ 20 = 1.5 hours, and 10:15 plus 1 hour 30 minutes is 11:45.
17	D	A score out of 25 becomes a percentage by multiplying by 4, since 25 × 4 = 100. Ali's score is 18 × 4 = 72%, which beats Beth's 70% by 72 − 70 = 2%.
18	C	The sequence goes up in 7s. From the 1st to the 11th term there are 10 steps, so 6 + 10 × 7 = 76.
19	D	Multiply by 1,000: 0.35 × 1,000 = 350 ml.
20	B	Each rectangle comes from a pair of factors of 24 multiplied together: 1 and 24, 2 and 12, 3 and 8, and 4 and 6. After that the pairs simply repeat the other way round, so there are 4 different rectangles.
21	D	A quarter of 1 kg is 1,000 ÷ 4 = 250 g, so three quarters is 3 × 250 = 750 g. Three batches need 3 × 250 = 750 g as well, exactly what Ravi has, so there is nothing left over.
22	E	The hour hand is just past the 9. The minute hand points at the 2, and 2 × 5 = 10 minutes. The time is 9:10.
23	C	The third angle is 180° − 40° − 75° = 65°. The exterior angle sits next to it on a straight line, so it is 180° − 65° = 115°. (This matches the rule that an exterior angle equals the two opposite interior angles added: 40° + 75° = 115°.)
24	E	The square's side is 24 ÷ 4 = 6 cm, so its area is 6 × 6 = 36 cm². For the rectangle, one length plus one width is 24 ÷ 2 = 12 cm, so its width is 12 − 8 = 4 cm and its area is 8 × 4 = 32 cm². The square is larger by 36 − 32 = 4 cm².

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25	D	For every van there are 3 cars, so the vehicles come in groups of 1 + 3 = 4. The number of groups is 48 ÷ 4 = 12, and each group holds one van, so there are 12 vans and 36 cars.
26	B	To round to 1 decimal place, look at the 2nd decimal digit. The 2nd decimal digit is 3, which is less than 5, so we round down. 8.63 → 8.6.
27	E	45 minutes is three quarters of an hour. The faster runner covers 3/4 of 8 km, which is 6 km, and the slower one covers 3/4 of 6 km, which is 4.5 km. The gap between them is 6 − 4.5 = 1.5 km.
28	D	A quarter of the seats is 32 ÷ 4 = 8 empty seats. The passengers fill the rest, so there are 32 − 8 = 24 of them, which is three quarters of the bus.
29	A	The tens digit 6 and the units digit 2 make 62 before the decimal point. The tenths column is the first one after the point, so the 9 goes straight after it, giving 62.9.
30	B	Divide both sides by 3: x + 4 = 9. Then take 4 from both sides: x = 5.
31	C	There are 2 + 5 + 4 = 11 parts, so one part is 385 ÷ 11 = 35 tickets. The smallest share is 2 parts, which is 2 × 35 = 70.
32	D	A quarter of the pupils chose a cat, which is 24 ÷ 4 = 6 pupils. Everyone else chose a different pet, so that is 24 − 6 = 18 pupils.
33	B	From A to B the move is 2 right and 3 up. Taking the same step again from B gives 3 + 2 = 5 across and 5 + 3 = 8 up, so C is (5, 8).
34	D	From −7 up to 0 is 7 degrees and from 0 up to 18 is 18 more, so the rise is 25 degrees.
35	A	0.5 is another way of writing one half, and taking half of a number is the same as sharing it between 2. For example 30 × 0.5 = 15 and 30 ÷ 2 = 15.
36	C	The job takes 5 × 12 = 60 worker-days, so 3 workers take 60 ÷ 3 = 20 days.
37	B	The number must be somewhere in the forties, since 40 × 40 = 1,600 and 50 × 50 = 2,500. A number ending in 2 or 8 gives an answer ending in 4, and checking 42 gives 42 × 42 = 1,764.

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38	A	The temperature drops 8 degrees to reach zero and then 5 degrees more, so the whole fall is 8 + 5 = 13 degrees. Spread evenly over 4 hours, each hour brings a fall of 13 ÷ 4 = 3.25 degrees.
39	B	From 09:35 to 14:35 would be 5 hours, but the journey ends 15 minutes earlier, so it takes 4 h 45 min.
40	E	April sold 240, and 25% of 240 is 240 ÷ 4 = 60. May sold that much more, so 240 + 60 = 300 bicycles.
41	C	The base is 10 − 2 = 8 squares long, and the area is half of base times height, so half of 8 times the height must be 20. Four times the height is 20, so the height is 5. The base sits at y = 1, so k = 1 + 5 = 6.
42	E	The multiples of 7 between 50 and 100 are 56, 63, 70, 77, 84, 91 and 98. A number that leaves a remainder of 2 after dividing by 5 must end in 2 or 7, and the only one of those multiples that does is 77.
43	A	7,649 rounds up because the tens digit is 4 but the hundreds rounding threshold pushes it to 7,600.
44	B	The water forms a cuboid, so its volume is 25 × 10 × 1.4 = 350 m³. One cubic metre holds 1,000 litres, so the pool holds 350 × 1,000 = 350,000 litres.
45	C	0.045 × 2 = 0.09, and multiplying by 100 as well gives 9. Check: 45 × 200 = 9000, and 0.045 is 45 ÷ 1000, so the answer is 9000 ÷ 1000 = 9.
46	A	Each shape uses 3 more squares than the one before, so the rule is 3 times the shape number, plus 1. Checking the first shape gives 3 × 1 + 1 = 4, which is right, so the 20th shape uses 3 × 20 + 1 = 61 squares.
47	C	4 hours 30 minutes is 4.5 hours, so the speed is 315 ÷ 4.5 = 70 km/h.
48	A	Service 1 takes from 07:05 to 09:25, which is 2 hours 20 minutes, or 140 minutes. Service 3 takes from 11:55 to 14:10, which is 2 hours 15 minutes, or 135 minutes. The difference is 140 − 135 = 5 minutes.

49	E	Rounded to the nearest centimetre the lengths are 5 cm and 4 cm, so the area is roughly 5 × 4 = 20 cm^2. Worked out exactly the area is 5.2 × 3.9 = 20.28 cm^2, so the estimate is a close one.
50	D	The angles of a quadrilateral add up to 360°, so 2x + 4x + 2x + 4x = 360°. That gives 12x = 360°, so x = 30°.

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