Maths Mock Test Paper 7 Answers

Q#	Answer	Explanation
1	E	Find the Diving row and read across to the Starts column. It shows 11:40.
2	C	Rising means adding: −30 + 12 = −18, so the submarine is at −18 m.
3	D	Anything to the left of the y-axis has a negative x-coordinate. Only (−4, 1) has a negative first number.
4	A	The highest common factor of 18 and 24 is 6. Dividing gives 18 ÷ 6 = 3 and 24 ÷ 6 = 4, so the ratio is 3 : 4.
5	C	Multiply by 1,000: 4 × 1,000 = 4,000 ml.
6	D	The volume of a cube is edge × edge × edge, so 6 × 6 × 6 = 216 cm^3.
7	C	Adding 10,000 means increasing the ten-thousands column by 1. The 8 in the ten-thousands column becomes a 9, making it 99,541.
8	D	The clock shows 3 o'clock. The hands are a quarter of a full turn apart, and a quarter of 360° is 90°.
9	B	Replace y with 9, which gives 9 − 4 = 5.
10	C	2.5 is two and a half. Four lots of 2.5 is 2.5 + 2.5 + 2.5 + 2.5 = 10.
11	D	From −7 up to 0 is 7 steps and from 0 up to 6 is 6 more, so the distance is 13.
12	A	V is at (3, 5). Moving 4 right gives 3 + 4 = 7, and moving 1 down gives 5 − 1 = 4, so V lands on (7, 4).
13	C	Adding 2 hours to 19:45 gives 21:45, and adding 20 more minutes gives 22:05.
14	A	As decimals: 7/20 = 0.35, 36% = 0.36, 3/8 = 0.375, 0.39 and 0.4. The smallest is 0.35, which is 7/20.
15	C	If 2/5 are boys then 3/5 are girls, so for every 2 boys there are 3 girls, giving the ratio 2 : 3.

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16	B	The length and width together are half the perimeter: 36 ÷ 2 = 18 cm. So the length is 18 − 7 = 11 cm.
17	C	1.5 litres is 1,500 ml, and 1,500 ÷ 6 = 250 ml in each glass.
18	B	Half of the circle stands for half of the pupils, and half of 36 is 36 ÷ 2 = 18 pupils.
19	D	Work from left to right: 3 × 4 = 12, then 12 × 5 = 60.
20	C	Start at 6 on the y-axis, go across to the line, then straight down to the x-axis, which reads 3. It checks out, because 2 × 3 = 6.
21	C	This is the lowest common multiple of 15 and 20. Multiples of 15: 15, 30, 45, 60. Multiples of 20: 20, 40, 60. After 60 minutes it is 1:00 pm.
22	D	The range is the highest minus the lowest: 5 − (−8) = 5 + 8 = 13 degrees.
23	A	The exterior angles of any polygon add up to 360°. A regular octagon has 8 of them, so each is 360° ÷ 8 = 45°.
24	B	0.36 is 36/100. Dividing top and bottom by 4 gives 9/25.
25	D	Double 170 is 340 and double 5 is 10, so double 175 is 340 + 10 = 350.
26	C	The base area is 7 × 5 = 35 cm², and the height is 210 ÷ 35 = 6 cm.
27	A	Change them all to millilitres: 380, 400, 420, 450 and 500 ml. The smallest is 0.38 l, which is 380 ml.
28	C	2x = 2 × 5 = 10 and 3y = 3 × 3 = 9, so the total is 10 + 9 = 19.
29	C	1 hour 20 minutes is 4/3 hours, so the speed is 96 ÷ (4/3) = 96 × 3 ÷ 4 = 72 km/h.
30	D	Half the perimeter is one length plus one width, which is 35 cm and equals 5 + 2 = 7 parts. One part is 35 ÷ 7 = 5 cm, so the length is 5 × 5 = 25 cm.

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31	D	The thousandths place is the third decimal place to the right of the point. In 5,283.916, that digit is 6.
32	E	Work out each chance: the dice gives 1/6, the bag gives 3/10, the word MATHS has one vowel among five letters so 1/5, Monday gives 1/7, and the coin gives 1/2. The largest of these is 1/2, so the coin is the most likely.
33	C	42.8 rounds to 43 and 5.1 rounds to 5. 43 × 5 = 215. (The exact answer is 218.28, but the estimate is 215.)
34	C	Divide the cost by the weekly saving: £45 ÷ £2.50 = 18 weeks.
35	D	Read down the Fri column: the 7th, 14th, 21st and 28th. The fourth Friday is the 28th.
36	A	The sequence goes up in 7s, so start with 7n, giving 7, 14, 21, 28. Each term is 5 more, so the rule is 7n + 5.
37	A	The six numbers add up to 6 × 10 = 60 and the five given add up to 7 + 9 + 11 + 12 + 13 = 52, so the missing number is 60 − 52 = 8. That is not a new largest or smallest, so the range stays 13 − 7 = 6.
38	B	Make B the same in both ratios. A : B = 4 : 5 = 8 : 10, so A : B : C = 8 : 10 : 9 and A : C = 8 : 9.
39	B	The distances are 120 km and 90 km, making 210 km in 3 hours, so the average speed is 210 ÷ 3 = 70 km/h.
40	B	If all 35 animals had 2 feet there would be 70 feet. There are 24 extra feet and each rabbit adds 2 extra, so there are 24 ÷ 2 = 12 rabbits.
41	A	Cancel three zeros from both numbers to simplify to 4000 divided by 8. 4000 / 8 = 500.
42	D	Brackets come first: 14 + 6 = 20. Then 3 × 20 = 60.
43	D	The first two significant figures are 9 and 9. The next digit is 9 (≥ 5), so we round up the second 9. That gives 10, which carries over: 0.99 rounds up to 1.0.

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44	C	If the width is 6 cm then the length is 12 cm, and 6 × 12 = 72 cm². So the perimeter is 2 × (6 + 12) = 36 cm.
45	C	One tonne is 1,000 kg, so 0.45 tonnes is 0.45 × 1,000 = 450 kg.
46	B	The angles of a triangle add up to 180°, so 2x + 3x + 4x = 180°. That gives 9x = 180° and x = 20°. The smallest angle is 2x = 2 × 20° = 40°.
47	B	When x = 3 the rule gives y = 12, and when x = 6 it gives y = 24. Since 24 is twice 12, doubling x doubles y, which happens whenever the line goes through the origin.
48	C	First find 3/10 of 120: 120 ÷ 10 = 12, and 12 × 3 = 36. Then 5/6 of 36: 36 ÷ 6 = 6, and 6 × 5 = 30.
49	C	Each term is 4 more than the one before: −5, −1, 3, 7, 11, 15, 19, 23. The first term above 20 is 23, which is the 8th.
50	D	The number of rows must divide both 60 and 48, so it is their highest common factor. That is 12, giving 5 tulips and 4 roses in each row.

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