Maths Mock Test Paper 18 Answers

Q#	Answer	Explanation
1	C	Six oranges are three lots of 2, so the bowl holds three lots of 3 apples, which is 3 × 3 = 9 apples.
2	C	5 × 11 = 55. In the 11 times table up to 9, the digit is simply repeated: 11, 22, 33, 44, 55.
3	A	Three thousand, two hundred and seven is 3 thousands, 2 hundreds, no tens and 7 units, which is written 3,207. Chloe has slipped in one zero too many in the tens column, and that pushes every digit a column to the left, making her number ten times too big.
4	C	Chess lasts 1 hour 15 minutes, Art lasts 1 hour 20 minutes and Football lasts 1 hour 30 minutes. The longest is Football.
5	B	Adding 3 to −5 means moving 3 steps to the right: −5, −4, −3, −2.
6	C	To the nearest 10 the crowd would be 4,540 and to the nearest 100 it would be 4,500, and neither is 5,000. Rounding to the nearest 1,000 looks at the hundreds digit, which is 5, so 4,538 rounds up to 5,000.
7	D	Multiply the three measurements: 10 × 10 × 2 = 200 cm^3.
8	B	The mode is the score that appears most often. The score 8 appears twice, while 6, 9 and 14 each appear only once.
9	C	Divide the distance by the time: 18 ÷ 1.5 = 12 km/h.
10	C	A rectangle is defined as having four right angles. A rhombus and a parallelogram have equal opposite angles, but those need not be 90°, and a trapezium or a kite may have no right angle at all.
11	E	The centre is halfway along each side of the rectangle. Halfway between 0 and 10 is 5, and halfway between 0 and 6 is 3, so the diagonals cross at (5, 3).

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12	D	Add them all: 14 + 9 + 21 + 6 + 15 + 13 = 78. There are six numbers, so the mean is 78 ÷ 6 = 13.
13	B	After 8 weeks she has saved 3.50 × 8 = 28 pounds, which is short of 30. After 9 weeks she has 3.50 × 9 = 31.50 pounds, so the ninth week is the first to take her past £30.
14	C	There are 1,000 g in a kilogram, so 950 g is 950 ÷ 1000 = 0.95 kg. The two parcels together weigh 3.6 + 0.95 = 4.55 kg.
15	C	Volume is base area × height, so the height is 120 ÷ 24 = 5 cm.
16	C	One book weighs 2.4 ÷ 6 = 0.4 kg, so nine of them weigh 0.4 × 9 = 3.6 kg.
17	E	The interior angles of a hexagon add up to (6 − 2) × 180° = 720°. The hexagon is regular, so each angle is 720° ÷ 6 = 120°.
18	B	450: the first significant figure is 4, and the next digit is 5 (≥ 5), so it rounds up to 500. The others round to 400 (449) or 600 (550, 551, 600).
19	C	Each kilometre takes 12 ÷ 3 = 4 minutes, so 8 km takes 8 × 4 = 32 minutes.
20	C	The second term is 2 × 3 − 2 = 4, and applying the rule again gives a third term of 4 × 3 − 2 = 10.
21	C	Two hours is 2 × 60 = 120 minutes, and adding the extra 5 gives 120 + 5 = 125 minutes.
22	C	Divide by 1,000: 3,200 ÷ 1,000 = 3.2 litres.
23	C	The first cyclist rides at 24 ÷ 2 = 12 km/h. The second takes 1.5 hours, riding at 24 ÷ 1.5 = 16 km/h. The difference between them is 16 − 12 = 4 km/h.
24	B	The lines meet where both rules give the same y. At x = 2 the first gives 2 + 1 = 3 and the second gives 5 − 2 = 3, so they cross at (2, 3).
25	B	Both depths are below the surface, so the dive is the gap between them, which is 60 − 25 = 35 m.
26	D	Since 8 × 12 = 96, dividing 96 by 8 gives 12.

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27	D	The difference is 5 − 4 = 1 part, so one part is 12 members. Altogether there are 9 parts, which is 9 × 12 = 108.
28	C	Each share of the present costs 54 ÷ 3 = 18 pounds. The friend who buys the card pays that share plus the card, which is 18 + 6 = 24 pounds.
29	C	The number of packs must divide both 48 and 36, so it is their highest common factor. The largest number dividing both is 12, giving 4 pencils and 3 rubbers per pack.
30	C	The price has come down by 45 − 36 = 9 pounds. As a fraction of the original price that is 9/45, which cancels to 1/5, and one fifth written as a percentage is 20%.
31	A	Writing 0.5 as 0.50 puts both numbers in hundredths and makes the comparison fair: 45 hundredths against 50 hundredths, so 0.5 is bigger. Counting how many digits a decimal has tells you nothing about its size.
32	B	The length and width together are half the perimeter: 46 ÷ 2 = 23 cm. So the length is 23 − 8 = 15 cm.
33	A	The bands of 6 marks or more are 6-8 and 9-10, so add those two bars: 12 + 7 = 19 pupils.
34	B	The small square is 90°. The angles lie on a straight line, so 90° + x + 2x = 180°. That gives 3x = 90°, so x = 30°.
35	C	0.49 rounds to 0.5 (1 s.f., since the first significant figure is 4 and the next digit 9 ≥ 5). 0.5 × 20 = 10. (The exact answer is 9.8.)
36	C	Six thousands make 6,000, four tens make 40 and nine tenths make 0.9. With nothing in the hundreds or units columns, those hold zeros, so the number is 6,040.9.
37	D	The ratio has 1 + 2 + 2 + 3 = 8 parts sharing 360°, so one part is 45°. The largest angle is 3 parts: 3 × 45° = 135°.
38	E	The line starts at 6 and falls to 0 over 3 squares across, so it drops 6 ÷ 3 = 2 for each square. Falling by 2 each time gives y = 6 − 2x.

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39	C	At 15 km every hour, one kilometre takes 60 ÷ 15 = 4 minutes. Four kilometres therefore take 4 × 4 = 16 minutes.
40	D	Split 15 into 10 and 5: 18 × 10 = 180 and 18 × 5 = 90, and 180 + 90 = 270.
41	D	The whole rectangle is 15 × 9 = 135 m² and the piece removed is 6 × 4 = 24 m², so the area is 135 − 24 = 111 m².
42	E	Splitting 84 step by step gives 2 × 42, then the 42 splits into 2 × 21 and the 21 into 3 × 7, so 84 is 2 × 2 × 3 × 7. Every one of those is prime, whereas the other answers still contain 42, 21, 14 or 4, none of which is prime.
43	D	Since 12 own neither, 80 − 12 = 68 people own at least one animal. The two lists add to 45 + 38 = 83, which counts the both group twice, so that group is 83 − 68 = 15.
44	D	The terms are 1 + 1 = 2, 4 + 1 = 5, 9 + 1 = 10 and 16 + 1 = 17, and 1, 4, 9 and 16 are the square numbers, so each term is its position squared plus one. The gaps grow by 2 every time, which is why adding a fixed amount cannot give this sequence.
45	C	Two kilograms cost £7.00 and 0.4 kg costs £1.40, so the total is £8.40.
46	C	Two thirds of 900 is 900 ÷ 3 × 2 = 600 litres. Drawing off 150 litres leaves 600 − 150 = 450 litres in the tank.
47	C	When a measurement rounds to 12.6 kg (to the nearest 0.1 kg), the actual weight lies in the range 12.55 kg to 12.65 kg. The smallest possible value is 12.55 kg; anything below 12.55 would round to 12.5 kg.
48	B	'Of' means multiply: 1/3 × 3/5 = 3/15, which simplifies to 1/5.
49	C	Let one part be n, so there are 7n boys and 5n girls. Then 5n + 24 = 7n, giving 2n = 24 and n = 12. The number of boys is 7 × 12 = 84.
50	C	Division is done before addition, and sharing −20 into four equal parts gives −5. Counting on 7 from −5 passes zero and reaches 2.

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