Maths Mock Test Paper 3 Answers

Q#	Answer	Explanation
1	C	Bus A leaves Oak Road at 08:15 and reaches Hillside at 08:37. From 08:15 to 08:37 is 22 minutes.
2	C	A square has 4 equal sides, so the perimeter is 4 × 9 = 36 cm.
3	C	The volume of a cuboid is length × width × height, so 5 × 3 × 2 = 30 cm³.
4	C	From 3:15 pm, 45 minutes later is 4:00 pm, because 15 + 45 = 60 minutes, which is one whole hour.
5	D	The prefix "kilo" means one thousand, so 1 kilometre is 1,000 metres.
6	B	12 is made of 10 and 2, so twelve 25s are ten 25s plus two 25s. That is 250 + 50 = 300, the same as 25 × 12 = 300.
7	B	From 06:10 to 07:00 is 50 minutes, because 60 − 10 = 50.
8	C	17 can be divided exactly only by 1 and by itself, so it has exactly two factors, which is what makes a number prime. It is odd, it is not in the 7 times table, and no whole number multiplied by itself gives 17.
9	C	Angles on a straight line add up to 180°, so x = 180° − 130° = 50°.
10	C	A is at (2, 1) and B is at (2, 6). Both sit in the same column, so the line joining them is vertical and its length is the difference between the y-values: 6 − 1 = 5 squares.
11	B	All the terms use the same letter, so work with the numbers: 7 − 2 + 5 = 10, giving 10c.
12	B	Dividing the distance by the longest allowed time gives 45 ÷ 3 = 15 km/h, so any slower speed would take too long.
13	C	Half an hour is 30 minutes, so the snail crawls 12 × 30 = 360 cm. There are 100 cm in a metre, so 360 ÷ 100 = 3.6 m.

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14	D	Add an hour to reach 21:30, then 55 more minutes to reach 22:25. From 20:30 to 22:25 is 1 hour 55 minutes.
15	D	One litre is 1,000 ml. One fifth of that is 1,000 ÷ 5 = 200 ml, so two fifths is 200 × 2 = 400 ml.
16	E	The number of tiles must be a square number. 100 = 10 × 10, so it makes a square with 10 tiles along each side.
17	C	Count 19 degrees up from −12: twelve of them reach 0, and the remaining 7 give 7°C.
18	D	Take each pair of factors of 36 and add it up: 1 + 36 = 37, 2 + 18 = 20, 3 + 12 = 15, 4 + 9 = 13 and 6 + 6 = 12. Only 4 and 9 add to 13.
19	A	The midpoint is halfway along in each direction. Halfway between −5 and 3 is −1, and halfway between 2 and 8 is 5, so the midpoint is (−1, 5).
20	C	48 is 2 less than 50, so using 50 counts six lots of 2 too many, and 6 × 2 = 12. Checking: 6 × 50 = 300, then 300 − 12 = 288, and 6 × 48 = 288.
21	D	The sequence goes up in 7s, so the missing term is 9 + 7 = 16.
22	D	It is 25 minutes from 11:35 to 12:00, leaving 30 more minutes, which reaches 12:30. From 11:35 to 12:30 is 55 minutes.
23	C	There are 5 fifths in each whole, so 4 wholes make 20 fifths. Adding the extra 2 fifths gives 22/5.
24	B	From 09:45 to 11:15 is 90 minutes. Split equally between three parts, each part lasts 90 ÷ 3 = 30 minutes.
25	D	4 hours 30 minutes is 4.5 hours, so the distance is 40 × 4.5 = 180 km.
26	C	5n is short for 5 × n. With n = 7 that gives 5 × 7 = 35, and taking 3 away gives 35 − 3 = 32.
27	C	At 10 am the walker was 4 km from home and at 12 pm was 12 km from home, so the distance covered was 12 − 4 = 8 km.
28	D	A quarter of 24 is 24 ÷ 4 = 6, so Mia eats 6. Between them they eat 6 + 6 = 12, which leaves 24 − 12 = 12 chocolates.

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29	D	Multiply the weight by the price per kilogram: 2.5 × £1.80 = £4.50.
30	D	Each biscuit needs 200 ÷ 8 = 25 g of flour, so 20 biscuits need 20 × 25 = 500 g.
31	B	Going round the rectangle there are two widths and two lengths, and each length is worth two widths, so the perimeter is made of 6 widths in all. One width is therefore 30 ÷ 6 = 5 cm.
32	B	The answers are −2, −8, −5, 3 and 0. The smallest is −8, which comes from −5 − 3.
33	E	Change them all to grams: 3,050, 3,200, 3,400, 3,450 and 3,500 g. The heaviest is 3.5 kg.
34	C	25% is a quarter, so 25% of 80 is 80 ÷ 4 = 20. For 80% of 25, one tenth of 25 is 25 ÷ 10 = 2.5, and eight of those is 2.5 × 8 = 20. Both come to 20, so Sam is right.
35	C	83 has only the factors 1 and 83. The others can be broken down: 77 = 7 × 11, 81 = 9 × 9, 87 = 3 × 29 and 91 = 7 × 13.
36	D	If half the number is 36, the number itself is 36 × 2 = 72. A quarter of 72 is 72 ÷ 4 = 18, so three quarters is 18 × 3 = 54.
37	C	Numbers that round to 0.047 (2 s.f.) must be from 0.0465 up to (but not including) 0.0475. The upper bound is 0.0475; any value at or above 0.0475 would round up to 0.048.
38	D	36 breaks down into 2 × 2 × 3 × 3, so the only primes it is built from are 2 and 3. 31 is prime, 33 breaks into 3 × 11, 35 into 5 × 7 and 38 into 2 × 19, so each of those brings in a prime other than 2 and 3.
39	E	Add the five bars: 6.5 + 4 + 7.5 + 5 + 3.5 = 26.5 hours. Over five days the mean is 26.5 ÷ 5 = 5.3 hours.
40	D	Add the last two terms: 13 + 21 = 34.
41	D	10% of £180 is £18, so 40% is £72. 5% is £9, so 45% is £81. Then £180 + £81 = £261.

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42	C	Rounding to 1 decimal place is decided by the hundredths digit. Every number from 4.55 up to just below 4.65 rounds to 4.6, while 4.54 would round down to 4.5, so the smallest possible number is 4.55.
43	D	If all 30 coins were 5p the total would be £1.50. Each 20p instead of a 5p adds 15p, and the extra is £2.85, so there are 285 ÷ 15 = 19 twenty-pence coins.
44	B	Starting at −18 m and rising 7 m gives −11 m. Descending 4 m gives −15 m, which is 15 metres below sea level.
45	B	Netball fills a quarter of the circle, which is 24 ÷ 4 = 6 pupils. Hockey fills an eighth, which is 24 ÷ 8 = 3 pupils. Netball was chosen by 6 − 3 = 3 more pupils.
46	E	Angles around a point add up to 360°, so (x + 10°) + 2x + (3x − 10°) = 360°. The +10° and −10° cancel, leaving 6x = 360°, so x = 60°.
47	B	Halfway is 90 ÷ 2 = 45 km. The car covers 60 km in an hour, so 45 km takes 45 ÷ 60 = 0.75 of an hour, which is 45 minutes. From 10:00 to 10:45 is 45 minutes.
48	A	The values are 15, −16, −12, −13 and −18. Only −3 × (−5) is positive, because two negatives multiplied give a positive.
49	B	One part is 5 ÷ 10 = 0.5 kg, so there is 3.5 kg of copper and 1.5 kg of tin. The copper stays as 7 parts of 0.5 kg, so the tin must become 5 × 0.5 = 2.5 kg, meaning 2.5 − 1.5 = 1 kg is added.
50	C	Six apples is two lots of three, costing 1.20 × 2 = 2.40. One pear costs 2 ÷ 4 = 0.50, so six pears cost 0.50 × 6 = 3.00. The total is 2.40 + 3.00 = 5.40, so Anya spends £5.40.

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