Maths Mock Test Paper 20 Answers

Q#	Answer	Explanation
1	B	Read each bar against the scale: Monday 6, Tuesday 9, Wednesday 12, Thursday 4 and Friday 14. Monday and Friday give 6 + 14 = 20 cakes. The nearest of the other pairs is Tuesday and Wednesday, which give 9 + 12 = 21.
2	C	A rectangle folds exactly onto itself in two ways: one fold across the middle horizontally and one vertically. The diagonals are not lines of symmetry, so the answer is 2.
3	E	To round to the nearest 1,000, look at the hundreds digit. The hundreds digit is 8, which is 5 or more, so we round up to 4,000.
4	D	A number divides by 3 when its digits add up to a multiple of 3. For 72 the digits give 7 + 2 = 9, which is in the 3 times table, and sharing gives 72 ÷ 3 = 24 each. The other digit sums are 11, 13, 10 and 13, and none of those is a multiple of 3.
5	B	The rule adds 3 to each x value. When x = 3, y = 3 + 3 = 6.
6	B	Point zero five means a zero in the tenths place and a 5 in the hundredths place, which is 6.05. The number 6.5 would be read as six point five, and 6.005 as six point zero zero five.
7	C	The perimeter is 2 × (10 + 7) = 2 × 17 = 34 cm.
8	B	1/4 means 1 ÷ 4 = 0.25. A quarter of one whole is 0.25.
9	D	The long hand points to the 8, which is twenty minutes to the hour, so the clock reads twenty to eight. On a 24-hour clock an evening hour has 12 added to it, so 7:40 in the evening is written 19:40.
10	C	In 3, 7, 11, 15 the step is 4 every time. None of the others has a fixed step: 2, 4, 8, 16 doubles, 1, 4, 9, 16 are the square numbers, 1, 2, 4, 7 goes up by 1, then 2, then 3, and 10, 9, 7, 4 falls by 1, then 2, then 3.

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11	C	10% of £80 is £8 and 5% is £4, so 15% is £12. The sale price is £80 − £12 = £68.
12	C	The departures are 09:12, 09:32, 09:52 and 10:12. Each one is 20 minutes after the one before.
13	C	The number of loaves comes from sharing the flour in the bag between the loaves: 10 kg is 10,000 g, and 10,000 ÷ 250 = 40 loaves. The price is about money and plays no part in that. Every other fact in the list is used along the way.
14	E	1.2 litres is 1200 ml and there are 1 + 5 = 6 parts, so one part is 1200 ÷ 6 = 200 ml. The water is 5 parts, which is 5 × 200 = 1000 ml.
15	B	Halving each time gives 96, then 48, then 24, then 12, then 6. Counting 96 itself as the first term is what makes the 5th term 6 rather than 12.
16	C	Since 11 × 12 = 132, dividing 132 by 11 gives 12.
17	A	5 thousands = 5,000; 2 hundreds = 200; 6 ones = 6. Total = 5,206.
18	D	From −17 up to 0 is 17, and from 0 up to 8 is 8 more, so the difference is 17 + 8 = 25.
19	B	Turned once all the way round, the square B looks exactly the same in four different positions, so its order is 4. The rectangle A and the parallelogram C look the same twice, the equilateral triangle E three times, and the kite D only when it is back where it started.
20	B	Take 30 from both sides to get −2x = −18, so 2x = 18 and x = 9. Checking, 30 − 18 = 12.
21	A	The even faces are 2, 4 and 6, which is 3 chances out of 6, or 1/2. The faces greater than 4 are only 5 and 6, which is 2 chances out of 6, or 1/3. Since 1/2 is bigger than 1/3, an even number is the more likely.
22	C	Chris's 5 parts are 45 stamps, so one part is 45 ÷ 5 = 9. Amy has 2 parts, which is 2 × 9 = 18 stamps.
23	B	If all 20 animals had 2 legs there would be 40 legs. There are 16 extra legs, and each cow adds 2 extra, so there are 16 ÷ 2 = 8 cows.

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24	E	The volume of a cube is edge × edge × edge, so 8 × 8 × 8 = 512 cm³.
25	C	The three cartons hold 3 × 400 = 1,200 ml between them. The recipe needs 1.5 litres, which is 1,500 ml, so Ravi is short by 1,500 − 1,200 = 300 ml.
26	B	Vertically opposite angles are equal, so 3x = 75°. Dividing both sides by 3 gives x = 25°.
27	B	A clock that runs fast shows a later time than the true one, so the 4 minutes have to come off. From 14:16 to 14:20 is 4 minutes, so the real time is 14:16.
28	D	0.48 rounds to 0.5 (1 s.f.) and 0.52 rounds to 0.5 (1 s.f.). 0.5 × 0.5 = 0.25. (The exact answer is 0.2496.)
29	A	Counting 9 upwards from −4 reaches 5, and counting 9 downwards from −4 reaches −13. Only −13 is on the list. The number −5 sits just 1 away from −4, and 13 is 17 away.
30	B	The tens digit is 8 which is 5 or more, so we round the hundreds up to 7,500.
31	C	A whole number divides by 4 whenever the number made by its last two digits does, and here 76 ÷ 4 = 19 exactly. An even last digit only shows that a number divides by 2: 2,378 is even but does not divide by 4.
32	D	10% of 350 is 35, so 20% is 70. 1% is 3.5, so 2% is 7. 70 + 7 = 77.
33	C	From A to B the line travels 6 squares across and 4 squares up, so it climbs 2 squares for every 3 it moves to the right. Starting at (1, 1) and going 3 right and 2 up lands on (4, 3), which is a point the line passes through. None of the others sits on it.
34	D	Add 300 to 58 to get 358, then take away the extra 3 to get 355.
35	B	Only the moving time counts for distance: 45 minutes is 0.75 hours, so 80 × 0.75 = 60 km. The train covers no distance while waiting.

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36	D	They sound together after a number of minutes that divides by both 15 and 20. The smallest such number is 60, so they next sound together 1 hour later at 10:00.
37	C	5 litres is 5,000 ml. Sixteen bottles use 16 × 300 = 4,800 ml, leaving 200 ml, which is not enough for another bottle.
38	C	Since 12 × 9 = 108, it follows that 12 × 90 = 1,080, so 1,080 ÷ 12 = 90.
39	A	A prime number has exactly two factors, 1 and itself. Both 3 and 17 are prime, and 3 + 17 = 20. Each of the other pairs contains a number that is not prime: 15 divides by 5, 9 divides by 3, 10 divides by 2 and so does 18.
40	B	9 × 7 = 63, and a negative multiplied by a positive gives a negative answer, so −9 × 7 = −63.
41	A	Work out what each offer takes off £36. One third off is 36 ÷ 3 = 12, so £12. To find 30%, note that 10% is £3.60, so 30% is 3 × 3.60 = 10.80, or £10.80. A quarter off is 36 ÷ 4 = 9, so £9. Against the £11 and £10 offers, the largest saving is the £12 from one third off.
42	E	The two marked angles are vertically opposite, so they are equal: 3x + 15° = 5x − 25°. Adding 25° and taking 3x from both sides gives 40° = 2x, so x = 20°.
43	C	Every multiplication by 10 moves the digits one place to the left. Starting at 0.007 the numbers go 0.07, then 0.7, then 7, then 70, so four multiplications are needed.
44	C	5,847 rounds to 6,000 (1 s.f.) and 0.312 rounds to 0.3 (1 s.f.). 6,000 × 0.3 = 1,800. (The exact answer is approximately 1,824.)
45	B	The two parallel sides are 7 squares and 3 squares long, and they are 4 squares apart. Adding the parallel sides gives 7 + 3 = 10, half of that is 5, and 5 × 4 = 20 squares.
46	B	Each face of a cube is 3 × 3 = 9 square centimetres, and a cube has six of them, so one cube has 6 × 9 = 54 square centimetres of surface. Two cubes give 2 × 54 = 108, but the two faces that are glued together are now inside, so take them off: 108 − 18 = 90 square centimetres.

47	C	From 2020 to 2023 is 3 years, and in that time the price rose by £60, so the yearly rise is 60 ÷ 3 = 20 pounds. Two more years from 2023 add 2 × 20 = 40, and 180 + 40 = 220, so the price is £220.
48	D	The whole 360° stands for 720 people, so each degree is worth 720 ÷ 360 = 2 people. The beach sector of 150° is therefore 150 × 2 = 300 people.
49	C	The whole job is 8 × 6 = 48 person-hours. In 2 hours they complete 16, leaving 32 person-hours for 4 people, which takes 32 ÷ 4 = 8 hours.
50	B	The runner covers 400 ÷ 50 = 8 metres every second. Three kilometres is 3,000 m, so the run takes 3000 ÷ 8 = 375 seconds. Since 6 × 60 = 360, that is 6 minutes with 15 seconds left over.

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