Maths Mock Test Paper 15 Answers

Q#	Answer	Explanation
1	B	7,501 has a hundreds digit of 5, which is 5 or more, so it rounds up to 8,000. The others round to 7,000 (7,382) or 9,000 (8,500, 8,623, 9,001).
2	B	Moving to the left along a number line makes a number smaller. Counting three places left from −5 gives −6, then −7, then −8, so the counter lands on −8.
3	C	A coin has two sides, a head and a tail, and both are equally likely. When two outcomes are equally likely there is an even chance of each.
4	D	One kilogram is 1,000 g, so a quarter of it is 1000 ÷ 4 = 250 g and three quarters is 250 × 3 = 750 g.
5	D	For times in the afternoon add 12 to the hour: 3 + 12 = 15. So 3:45 pm is 15:45.
6	A	A person walking steadily covers a little under 5 km in an hour, so 5 km/h is the sensible choice. 25 km/h is cycling pace, 50 km/h and 100 km/h belong to cars, and 500 km/h is faster than any train.
7	B	Sam gets one quarter of what Tom gets, so 20 ÷ 4 = 5 sweets.
8	A	Adding three lots of n is the same as multiplying n by 3, which is written 3n. Writing n × n × n would mean multiplying the three lots together instead of adding them.
9	A	Each of these points sits on an axis, so its distance from the origin is just the number that is not zero. Those distances are 3, 4, 5, 6 and 7, and the smallest is 3.
10	C	Each pot holds 24 ÷ 4 = 6 pencils. Emptying two pots removes 6 × 2 = 12 pencils, so 24 − 12 = 12 pencils are left in the other two pots.

myfreeschool

11	C	The rectangle is 5 + 5 = 10 cm long and 5 cm wide, so its perimeter is 10 + 5 + 10 + 5 = 30 cm. It is not 40 cm, because the two edges that were joined are now inside the rectangle and are not part of the way round.
12	D	The 2nd decimal digit is 7 (≥ 5), so we round up the 1st decimal digit. The 1st decimal digit is 9; rounding up gives 10, which carries over: 99.9 → 100.0.
13	A	Read along the Year 6 row, leaving out the pupils with no pet: 13 + 7 = 20 pupils own a pet.
14	D	Divide the distance by the time: 231 ÷ 3 = 77 km/h.
15	C	20% of 40 is 8, so the first reduction gives 40 − 8 = 32 pounds. The second reduction is 10% of 32, which is 3.20, giving 32 − 3.20 = 28.80 pounds. Taking 30% off at once would have been wrong, because the second reduction is taken from the smaller price.
16	C	A reflection in the x-axis leaves the x-coordinate alone and changes the sign of the y-coordinate. So (−4, 2) becomes (−4, −2).
17	C	The square marks a right angle of 90°. Angles around a point add up to 360°, so x = 360° − 90° − 130° = 140°.
18	B	A positive number times a negative one gives a negative answer, and 6 × 4 = 24, so the pair must be 6 and −4 one way round or the other. Counting back 4 from 6 gives a sum of 2, which is right, whereas −6 and 4 would add to −2.
19	C	Each centimetre stands for 2.5 km, so 6 cm stands for 6 × 2.5 = 15 km.
20	B	Four thousand puts a 4 in the thousands column, and with no hundreds and no tens both of those columns hold a zero. The six is six units and the five is five tenths, so the number is 4,006.5.
21	B	36 ÷ 4 = 9, so 3.6 ÷ 4 = 0.9. Check: 0.9 × 4 = 3.6.
22	D	Buying no notebooks costs nothing, so the line starts at (0, 0), and every extra notebook adds the same £4, so it climbs by the same amount each time and stays straight.

23	B	The only factors of 2 are 1 and 2, so 2 is prime, and it is also even, which is exactly the case Ben has missed. 1 is not prime because it has only one factor, and 9, 15 and 21 are odd but not prime.
24	C	Area of a triangle is half the base times the height: (18 × 9) ÷ 2 = 162 ÷ 2 = 81 cm².
25	B	From 14:35 to 16:25 is 1 hour 50 minutes, which is how long the journey should take. Making up 10 minutes brings the arrival forward from 16:25 to 16:15.
26	C	The sequence goes up in 3s, so start with 3n, which gives 3, 6, 9, 12. Each term is 1 more, so the rule is 3n + 1.
27	D	The first two significant figures are 9 and 6. The next digit is 5, which is 5 or more, so we round up the second significant figure. 9,650 → 9,700.
28	B	The jug holds 1.5 × 1000 = 1,500 ml. Seven glasses use 7 × 200 = 1,400 ml and an eighth would need 200 ml, which is more than is left, so 1,500 − 1,400 = 100 ml stays in the jug.
29	C	Turning the triangle by a third of a turn lands it back on itself, and this happens 3 times in a full turn, so the order is 3.
30	B	One hour after 09:45 is 10:45. Adding 20 minutes more gives 11:05.
31	C	The gap between a negative and a positive number is found by counting up to zero and then on. From −3 to 0 is 3 and from 0 to 7 is 7, giving 3 + 7 = 10. Every other pair here has a gap of only 9.
32	C	28 is 4 lots of the 7-part, so Tom's age is 4 lots of the 4-part: 4 × 4 = 16 years.
33	C	Find the juice bar and read across to the scale. Its top sits a quarter of the way between 20 and 40, at 25 drinks.
34	D	Six bags weigh 1.2 × 6 = 7.2 kg. A kilogram is 1,000 g, so that is 7.2 × 1000 = 7,200 g.
35	D	The journey takes 2 hours 15 minutes, which is 2.25 hours, so the speed is 180 ÷ 2.25 = 80 km/h.
36	B	In 6 minutes she descends 6 × 3 = 18 m, and −8 − 18 = −26, so she is at −26 m.

myfreeschool

37	A	The first counter is green with probability 4/10. Only 3 greens are then left among 9 counters, so the second is green with probability 3/9. Multiplying gives 4/10 × 3/9 = 2/15.
38	E	Four lessons take 4 × 45 = 180 minutes and the three change-overs add 3 × 5 = 15 minutes, making 195 minutes, or 3 hours 15 minutes. From 09:00 to 12:15 is 3 hours 15 minutes.
39	C	A number with 2, 3 and 5 as factors must be a multiple of 2 × 3 × 5 = 30. The multiples of 30 go 30, 60, 90, 120, so the first one past 100 is 120.
40	C	If 45% is 27, then 5% is 3 and 100% is 60. Then 80% of 60 is 3 × 16 = 48.
41	D	The three different faces are 8 × 3 = 24, 8 × 2 = 16 and 3 × 2 = 6 cm². There are two of each, so the surface area is 2 × (24 + 16 + 6) = 92 cm².
42	C	To round to 4,600 to the nearest 100 the number must lie between 4,550 and 4,649, and to round to 5,000 to the nearest 1,000 it must be at least 4,500. Only 4,610 passes both tests: 4,540 and 4,499 round to 4,500 to the nearest 100, and 4,651 and 4,700 round to 4,700.
43	A	Expand the bracket: 2 × x = 2x and 2 × (−5) = −10, giving 6x + 2x − 10. Then 6x + 2x = 8x, so the answer is 8x − 10.
44	B	Half of 3.6 is 1.8 and double 1.7 is 3.4. Adding the two gives 1.8 + 3.4 = 5.2.
45	B	897 rounds to 900 (1 s.f.) and 302 rounds to 300 (1 s.f.). 900 × 300 = 270,000. (The exact answer is 270,894.)
46	C	At 75 km/h the journey would take 150 ÷ 75 = 2 hours. The timetable allows 2 hours 30 minutes, so half an hour would be saved.
47	C	The exterior angles of any polygon add up to 360°, and in a regular polygon they are all equal, so the number of sides is 360 ÷ 24 = 15.
48	D	The reflection sends (2, 1) to (−2, 1). Moving 3 down takes 1 to 1 − 3, which is −2, so the image of A is at (−2, −2).
49	C	1 hour 30 minutes is 1.5 hours, and 9 ÷ 1.5 = 6 km/h.

50	B	Twelve pens make four packs, costing 4 × 2.10 = 8.40 pounds. Bought singly they would cost 12 × 0.80 = 9.60 pounds. The saving is 9.60 − 8.40 = 1.20 pounds.

myfreeschool