Maths Mock Test Paper 16 Answers

Q#	Answer	Explanation
1	C	Each term is twice the one before: 3 × 2 = 6, 6 × 2 = 12 and 12 × 2 = 24. Adding 3 each time would have given 3, 6, 9, 12 instead.
2	B	The hour is bigger than 12, so take 12 away: 18 − 12 = 6. Times after midday are pm, so 18:30 is 6:30 pm.
3	D	Three parts out of ten is the fraction 3/10, and a percentage counts parts out of 100. Multiplying both numbers by 10 turns 3/10 into 30/100, which is 30%.
4	D	Beech scored 50 and Pine scored 20, so the difference is 50 − 20 = 30 points.
5	B	The comic and the drink together cost 2.65 + 0.90 = 3.55 pounds. Taking that from his 5 pounds leaves 5 − 3.55 = 1.45 pounds.
6	D	To round to the nearest 100, look at the tens digit. The tens digit is 5, which is 5 or more, so we round up to 800.
7	D	Counting in sixes reaches 36, 42, 54 and 66, but it steps from 6 × 9 = 54 to 6 × 10 = 60, missing out 58 altogether.
8	D	The total must be a multiple of 5, so it must end in 0 or 5. 32 ends in 2, so it is not possible.
9	E	Dividing the distance by the speed gives the time. That is 10 ÷ 10 = 1 hour, 20 ÷ 20 = 1 hour, 30 ÷ 20 = 1.5 hours, 40 ÷ 40 = 1 hour and 60 ÷ 30 = 2 hours, so the last journey is the longest.
10	B	Divide by 100 to change centimetres into metres: 250 ÷ 100 = 2.5 m.
11	C	The ratio is made of 3 + 5 = 8 parts, so the total has to be a multiple of 8. The numbers 16, 24, 40 and 48 all are, but 30 is not, since 8 × 3 = 24 and 8 × 4 = 32.

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12	C	The number 40.357 is made up of 4 tens (40), 3 tenths (0.3), 5 hundredths (0.05), and 7 thousandths (0.007). The missing value is 5 hundredths, which is written as 0.05.
13	D	The range is the gap between the highest and the lowest reading. The highest is 5°C and the lowest is −6°C, and counting from −6 up to zero is 6 degrees and on to 5 is another 5, so the range is 6 + 5 = 11 degrees.
14	C	4 hours 30 minutes is 4.5 hours, so the speed is 270 ÷ 4.5 = 60 km/h.
15	A	The rectangle stretches from 1 to 5 across, and halfway between them is 3. A vertical line through every point with x = 3 is called x = 3.
16	A	0.1 is one tenth, so multiplying by 0.1 takes one tenth of the number, which is exactly what dividing by 10 does. For instance 0.1 × 60 = 6 and 60 ÷ 10 = 6.
17	E	The volume of a cube is edge × edge × edge, so 9 × 9 × 9 = 729 cm³.
18	B	Adding 12 minutes each time gives 10:18, then 10:30, then 10:42. Three trains later is 3 × 12 = 36 minutes after 10:06.
19	C	Find the Year 5 bar and read across to the scale. Its top sits halfway between 20 and 30, at 25 books.
20	D	A rhombus always has four equal sides, opposite angles equal, opposite sides parallel and diagonals crossing at right angles. Its four angles are equal only in the special case where the rhombus is a square, so that statement is not true of every rhombus.
21	B	From the 1st to the 22nd is 21 days, and 21 ÷ 7 = 3 exactly. Three whole weeks later is the same day, so 22 March is also a Tuesday.
22	B	The first two significant figures are 4 and 7. The next digit is 3, which is less than 5, so we round down. 0.00473 → 0.0047.
23	D	One whole is 100 hundredths, so three wholes are 3 × 100 = 300 hundredths. The 0.4 is four tenths, which is 40 hundredths, giving 300 + 40 = 340 altogether.

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24	D	The perimeter is 2 × (25 + 15) = 2 × 40 = 80 cm.
25	C	From 06:55 to 08:55 is 2 hours, and from 08:55 to 09:40 is 45 more minutes, making 2 hours 45 minutes.
26	C	A fraction is in its simplest form when no number above 1 divides both parts. Both 6 and 15 divide by 3, since 6 ÷ 3 = 2 and 15 ÷ 3 = 5, so 6/15 can be written as 2/5. The other four have no common factor.
27	D	The perimeter is 4 × 15 = 60 m, so the cost is 60 × £4 = £240.
28	D	Splitting the 24 into 20 and 4 gives 15 × 20 = 300 and 15 × 4 = 60, and putting them back together gives 300 + 60 = 360.
29	D	The 9th square number is 9 × 9 = 81.
30	B	Both points have an x-coordinate of 2, so the line runs straight up the grid and is vertical. Counting from −1 up to 5 covers 1 + 5 = 6 squares.
31	D	Find the bar above the 6-8 band and read across to the scale. The top of the bar is level with 12 pupils.
32	C	Each person needs 720 ÷ 9 = 80 g, so 4 people need 4 × 80 = 320 g.
33	B	After 1 week the balance is −48 + 30 = −£18, which is still negative. After 2 weeks it is −18 + 30 = £12, which is positive.
34	B	A number that divides by both 3 and 4 must be a multiple of 12, and only 24 and 60 are. Of those two, 60 also divides by 5, which is not allowed, so 24 is the answer.
35	D	3 litres is 3,000 ml, and 3,000 ÷ 250 = 12 glasses.
36	C	4.9 rounds to 5 cm (nearest whole). Area = $\pi \times r^2 \approx 3 \times 5^2 = 3 \times 25 = 75$ cm². (The exact area using $\pi = 3.14159$ is approximately 75.43 cm².)
37	C	The eighth ferry leaves seven gaps after the first, and 7 × 40 = 280 minutes, which is 4 hours 40 minutes. From 06:20 to 11:00 is 4 hours 40 minutes, so the eighth ferry leaves at 11:00.

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38	C	Let the parts be 4n boys and 5n girls. Then 4n + 3 = 5n, so n = 3. The number of girls is 5 × 3 = 15.
39	C	Draw the smallest upright square around it, which is 5 by 5 and has area 5 × 5 = 25. That leaves four right-angled triangles in the corners, each 4 squares by 1 square, so each has area 4 × 1 ÷ 2 = 2 and the four together are 8. The tilted square is 25 − 8 = 17 squares.
40	E	The three angles of a triangle must add up to exactly 180°. Checking each set, 60 + 60 + 60 = 180, 90 + 45 + 45 = 180, 100 + 40 + 40 = 180 and 110 + 40 + 30 = 180, but 120 + 30 + 20 = 170, which is 10° short.
41	C	If 65% is 91, then 5% is 91 ÷ 13 = 7. The whole number (100%) is 7 × 20 = 140.
42	C	The wall measures 8 × 3 = 24 m², and two coats mean covering 24 × 2 = 48 m² of surface. Each tin does 12 m², so 48 ÷ 12 = 4 tins are needed.
43	B	The hundred thousands digit is 7, which means you round up. 299 million rounds up to 300 million.
44	C	For n = 15 the term is 60 − 60 = 0, which is not negative. For n = 16 it is 60 − 64 = −4, the first negative term.
45	C	The outward drive takes 60 ÷ 40 = 1.5 hours and the return takes 60 ÷ 60 = 1 hour, so the whole journey takes 1.5 + 1 = 2.5 hours, which is 2 hours 30 minutes.
46	B	The total is −12 − 7 − 5 + 0 = −24, and −24 ÷ 4 = −6.
47	C	12 × 12 = 144 and 11 × 11 = 121, so the calculation is 144 − 121 = 23.
48	C	Monday is 12 and Thursday is 18, so the ratio starts as 12 : 18. Both numbers divide by 6, giving 12 ÷ 6 = 2 and 18 ÷ 6 = 3, so the ratio is 2:3. The hundreds cancel out, so they can be ignored.
49	D	45 = 15 × 3 and 75 = 15 × 5, so 15 divides both. Nothing larger does, since 3 and 5 have no common factor, so the HCF is 15.

50	D	The money splits into 2 + 1 + 1 = 4 equal parts, so one part is 96 ÷ 4 = 24 pounds. The eldest takes two parts, which is 24 × 2 = 48 pounds.

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