

Maths Mock Test Paper 9 Answers

Q#	Answer	Explanation
1	B	Counting back 45 minutes from 14:10 gives 13:25, because 10 minutes takes you to 14:00 and 35 more to 13:25.
2	B	The angles inside a quadrilateral add up to 360° . Here $65^\circ + 115^\circ + 115^\circ = 295^\circ$, so $x = 360^\circ - 295^\circ = 65^\circ$.
3	E	Nadia says the multiples of 4 and Tom says the multiples of 6, so a number they both say must be in both tables. 24 is the sixth number Nadia says, because $4 \times 6 = 24$, and the fourth number Tom says, because $6 \times 4 = 24$. Of the others, 18 and 42 are multiples of 6 only, and 28 and 32 are multiples of 4 only.
4	D	The team size must be a factor of 36. The factors are 1, 2, 3, 4, 6, 9, 12, 18 and 36, so teams of 8 are not possible.
5	D	Each number is double the one before, so the next term is $16 \times 2 = 32$.
6	B	Each person needs $200 \div 4 = 50$ g of rice, so 6 people need $6 \times 50 = 300$ g. Ali is right.
7	D	Multiply the speed by the time: $12 \times 4 = 48$ km.
8	E	The points (1, 4), (3, 4), (6, 4) and (8, 4) all have a y-coordinate of 4, so they sit on one straight line four units above the x-axis. The point (4, 6) has a y-coordinate of 6, so it does not lie on that line.
9	C	The units digit is 5, which is 5 or more, so we round up. 265 rounded to the nearest 10 is 270.
10	B	Decimals are compared column by column, not by how many digits they have. 0.5 is 5 tenths, the same as 0.50, and 0.45 is 4 tenths and 5 hundredths. Fifty hundredths is more than forty-five hundredths, so 0.5 is the larger number.
11	E	Rounded to the nearest 10 the numbers are 40 and 50, giving $40 \times 50 = 2,000$. The true total is $38 \times 52 = 1,976$, so the estimate of 2,000 is a little above the true total.

12	C	The primes are 2, 3, 5, 7, 11, 13, 17 and 19, which is 8 numbers. Remember that 1 is not a prime number.
13	C	The two angles lie on a straight line, so $x + (x + 40^\circ) = 180^\circ$. That gives $2x = 140^\circ$, so $x = 70^\circ$.
14	A	Corner F is at (4, 3). Reflecting in the y-axis keeps the height and moves the point the same distance to the other side, giving (-4, 3).
15	B	A perimeter is two lengths plus two widths, so the length and width together must be $20 \div 2 = 10$ cm. The areas can still differ: 8 cm by 2 cm has an area of 16 cm ² and 6 cm by 4 cm has an area of 24 cm ² , yet both have a perimeter of 20 cm.
16	E	A full turn is 360° shared between 40 pupils, so each pupil is worth $360 \div 40 = 9^\circ$. The 10 bus pupils take $10 \times 9 = 90^\circ$.
17	C	Count up from 6.5: 0.5 more makes 7, then 3 more makes 10, giving 3.5 altogether.
18	B	Before buying the drink she had $9 + 3 = 12$ pounds. That is the $\frac{3}{5}$ left after the book, so one fifth is $12 \div 3 = 4$ pounds and she started with $5 \times 4 = 20$ pounds.
19	D	Add 2 hours to reach 12:45, then 45 more minutes to reach 13:30. From 10:45 to 13:30 is 2 hours 45 minutes.
20	D	There are $5 + 3 = 8$ shares, so one share is $64 \div 8 = 8$ pupils. The boys are 5 shares, which is $5 \times 8 = 40$.
21	E	The small box holds 7.5 lots of 100 g and costs 300p, so $300 \div 7.5 = 40$ p for each 100 g. The large box holds 1,200 g, which is 12 lots of 100 g, so $432 \div 12 = 36$ p for each 100 g. The large box is cheaper by $40 - 36 = 4$ p for every 100 g.
22	C	From 09:48 to 11:48 is 2 hours, and from 11:48 to 12:06 is 18 more minutes, making 2 hours 18 minutes.
23	E	Each odd number is one more than an even number, so adding two of them adds two spare ones, which pair up: $7 + 9 = 16$ and $13 + 5 = 18$. Each of the others has a counter-example, such as $3 + 5 = 8$, which is not prime, and 6, which is an even multiple of 3.

24	C	At 9:30 the minute hand points at 6. The hour hand is half way between 9 and 10, so it is $3\frac{1}{2}$ hour marks from the 6. Each mark is 30° , so the angle is $3\frac{1}{2} \times 30^\circ = 105^\circ$.
25	C	10% of 240 is 24, so 40% is 96. 5% is half of 24, which is 12. $96 + 12 = 108$ boys.
26	D	The first square has sides of 6 cm, because $6 \times 6 = 36$. Twice as long is 12 cm, so the new area is $12 \times 12 = 144 \text{ cm}^2$. Doubling every side multiplies the area by 4, not by 2.
27	C	Work backwards: $18 \div 2 = 9$, and $9 + 4 = 13$. Checking, $(13 - 4) \times 2 = 18$.
28	E	A point on the y-axis has $x = 0$, whether it is above or below the origin. Point E is $(0, -3)$.
29	B	48 is 2 less than 50, so six 48s fall short of six 50s by $6 \times 2 = 12$, not by 6. The correct working is $300 - 12 = 288$, and $6 \times 48 = 288$.
30	D	The difference between two temperatures is how far apart they lie on the number line. Counting from the lower to the higher gives gaps of 11, 10, 8, 9 and 7 degrees, so the largest is the 11 degrees between -12°C and -1°C .
31	A	March reaches 60 and April drops to 40, so the fall is $60 - 40 = 20$.
32	E	Work in the same unit: the shelf is $2 \times 1,000 = 2,000$ mm long. Each book takes 25 mm of that, so the number of books is $2,000 \div 25 = 80$.
33	D	Leap years divide exactly by 4. Since $2030 \div 4 = 507$ remainder 2, it does not divide exactly, so 2030 is not a leap year.
34	E	3.705: the 3rd decimal digit is 5 (≥ 5), so it rounds up to 3.71, not 3.70. All others have a 3rd decimal digit less than 5, so they round down to 3.70.
35	A	A four-digit number cannot begin with 0, so the smallest digit that can go in the thousands column is 2. The digits 0, 4 and 7 then follow in order from smallest, giving 2,047.
36	B	'Of' means multiply: $\frac{3}{8} \times \frac{2}{3} = \frac{6}{24}$, which simplifies to $\frac{1}{4}$.

37	D	Every side is the slanted side of a right-angled triangle 4 squares one way and 3 the other. Since $4 \times 4 = 16$ and $3 \times 3 = 9$, the square on each side is $16 + 9 = 25$, so each side is 5 units because $5 \times 5 = 25$. The perimeter is $4 \times 5 = 20$ units.
38	A	Each loaf takes 350 g, so 28 loaves take $28 \times 350 = 9,800$ g, which is 9.8 kg. The bag holds 10 kg, or 10,000 g, so $10,000 - 9,800 = 200$ g is left, and that is not enough for a 29th loaf.
39	C	The factors of 25 are 1, 5 and 25. A number has exactly three factors only when it is a prime multiplied by itself. The others each have 4 factors.
40	A	If all 9 were children the cost would be $9 \times 5 = 45$ pounds, which is $57 - 45 = 12$ pounds short of what was paid. Swapping a child for an adult adds $8 - 5 = 3$ pounds, so the number of adults is $12 \div 3 = 4$.
41	E	Only the senior column matters, and it holds 75 members. 36 of them are male, so the probability is $36 \div 75 = 12/25$.
42	C	From 09:30 to 18:00 is 8 hours 30 minutes each day. Over 6 days that is $6 \times 8\frac{1}{2} = 51$ hours.
43	B	A number belongs to the sequence when taking away 3 leaves a multiple of 4. For 51, $51 - 3 = 48$ and $48 \div 4 = 12$, so 51 is the 12th term. Taking 3 from each of the others leaves 42, 45, 51 and 57, and none of those divides exactly by 4.
44	A	In 3.75 the 7 sits in the tenths column, so it is worth 0.7. Ten times that is $0.7 \times 10 = 7$, so the 7 has to sit in the units column. In 17.2 the 7 is in the units column and is worth 7.
45	B	By 09:00 the cyclist is 12 km ahead. The car gains $36 - 12 = 24$ km each hour, so it needs $12 \div 24 = 0.5$ hours, catching up at 09:30.
46	C	For a number to round up to 7,000, its hundreds digit must be 5 or more. The smallest such value is 6,500, because its hundreds digit is 5 (≥ 5), so it rounds up to 7,000. 6,499 has hundreds digit 4, which rounds down to 6,000.
47	A	The path takes 1 m off each of the four sides, so the rectangle left inside measures $60 - 2 = 58$ m by $40 - 2 = 38$ m. Its area is $58 \times 38 = 2,204$ m ² .

48	C	Multiplication comes first: $500 \times 3 = 1,500$. Then $1,500 - 750 = 750$.
49	D	The valley floor is at -45 m and the plane is at $1,200$ m, so the distance is $1,200 + 45 = 1,245$ m.
50	A	Every 5 g of flour needs 2 g of butter, so 700 g of flour is $700 \div 5 = 140$ lots of 5 g and needs $140 \times 2 = 280$ g of butter. Sara has 300 g of butter, which is more than enough, so the flour runs out first and $300 - 280 = 20$ g of butter is left.

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