

Number Properties: Medium Practice Paper 7 Answers

Q#	Answer	Explanation
1	A	A number divides by 4 when the number made by its last two digits does. Here 32, 56, 08 and 44 all divide by 4, but 18 does not, so 118 is the odd one out.
2	C	Pair the factors up: 1 goes with 45, 3 goes with 15, and 5 goes with 9. Three pairs make 6 factors altogether.
3	B	A prime number has exactly two factors, 1 and itself. The table shows 41 with two factors, so 41 is the prime. The number 49 has three factors because it is a square, $7 \times 7 = 49$.
4	C	List the multiples of 14: 14, 28, 42, 56. The first of these that is also in the eight times table is 56, since $8 \times 7 = 56$.
5	C	Leaving 3 over after dividing by 5 means the number ends in 3 or 8, which rules out 32 and 44. Of 18, 23 and 28, only 28 is also a multiple of 4, since $4 \times 7 = 28$.
6	C	The square root is the number that multiplies by itself to give 169, and $13 \times 13 = 169$, so the answer is 13.
7	E	59 has no factors apart from 1 and itself. Of the others, 51 is 3×17 , 55 is 5×11 and 57 is 3×19 . The number 53 is prime but it is smaller than 59.
8	D	Everything inside either circle counts, so add the three regions: 8 that are only even, 4 that are both, and 4 that are only multiples of 3. Then $8 + 4 + 4 = 16$ numbers.
9	A	Check the pairs that multiply to 36: 4 and 9 share no factor above 1, 6 and 6 share 6, 2 and 18 share 2, and 1 and 36 share only 1. The pair 3 and 12 has a highest common factor of 3.
10	C	The squares are 1, 4, 9, 16, 25, 36, 49, 64, 81 and 100, the last of them because $10 \times 10 = 100$. That makes 10 square numbers.

11	C	A multiplication is odd only when both numbers are odd, and $9 \times 7 = 63$ is odd. Anything multiplied by an even number is even, and two odd numbers added together, such as $23 + 19$, give an even answer.
12	A	Every even number can be divided by 2. For an even number bigger than 2 that gives a third factor besides 1 and itself, so it cannot be prime.
13	C	The square number is $50 - 1 = 49$. Since $7 \times 7 = 49$, its square root is 7.
14	C	The number of bunches has to divide both 56 and 42 exactly. Their common factors are 1, 2, 7 and 14, so the greatest is 14 bunches, each holding $56 \div 14 = 4$ roses and $42 \div 14 = 3$ lilies.
15	B	Count them: 36 has nine factors, 48 has ten, 50 has six, 64 has seven and 81 has five. The factors of 48 are 1, 2, 3, 4, 6, 8, 12, 16, 24 and 48.