

Number Properties: Hard Practice Paper 4 Answers

Q#	Answer	Explanation
1	D	$72 = 24 \times 3$ and $120 = 24 \times 5$, so 24 divides both. Nothing larger works, since 3 and 5 have no common factor, so the HCF is 24.
2	C	Multiples of 14: 14, 28, 42. Multiples of 21: 21, 42. The smallest number in both lists is 42.
3	A	The factors of 15 are 1, 3, 5 and 15, which is 4 factors. The others have 5 (16), 8 (24), 3 (25) and 9 (36).
4	C	149 cannot be divided by 2, 3, 5, 7 or 11, so it is prime. The others can: $143 = 11 \times 13$, $147 = 3 \times 49$, $153 = 9 \times 17$ and $155 = 5 \times 31$.
5	C	The number must be a multiple of both 12 and 18, so it is their lowest common multiple. That is 36, which is 3 packs of chocolate bars and 2 packs of straws.
6	D	Working down from 99: $99 = 9 \times 11$, 98 is even, 97 has no factors other than 1 and itself. So 97 is the largest two-digit prime.
7	C	3 squared is $3 \times 3 = 9$ and 4 squared is $4 \times 4 = 16$. Adding them gives $9 + 16 = 25$.
8	E	The difference is the distance between the numbers on a number line. From -12 up to 0 is 12, and from 0 up to 5 is 5, giving $12 + 5 = 17$.
9	D	$81 \div 9 = 9$, so it is a multiple of 9, and $81 = 9 \times 9$, so it is a square number. The others are multiples of 9 but not square numbers.
10	C	The lowest common multiple of 25 and 40 is 200 minutes, which is 3 hours and 20 minutes. Adding that to 10:00 am gives 1:20 pm.
11	D	A number has exactly three factors only when it is a prime multiplied by itself. Since it is a multiple of 5, the number is $5 \times 5 = 25$, whose factors are 1, 5 and 25.
12	C	The number of rows is the square root of 196. Since $14 \times 14 = 196$, there are 14 rows.

13	C	The multiples run 6, 12, 18, ... up to 96, which is 6×16 . So there are 16 multiples of 6 below 100.
14	C	The factors of 60 are 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30 and 60. The prime ones are 2, 3 and 5, and the largest of these is 5.
15	C	Starting at floor -3 and going up 9 floors reaches floor 6. Going down 2 floors from there gives floor 4.