

Class 4 Mathematics Advanced MCQ Practice Test (Original Set)

Topic: Advanced Factors, Multiples, Prime, Composite, HCF & LCM

Total Questions: 10

Q1. If a secret number is a multiple of 12 and also a multiple of 15, what is the smallest non-zero number it could possibly be?

A) 3 B) 30 C) 60 D) 180

Q2. How many factors does the smallest two-digit composite number have in total?

A) 2 B) 4 C) 5 D) 6

Q3. Two distinct prime numbers, P and Q, are multiplied together to get a new number ($P \times Q$). How many total factors does this new number have?

A) 2 B) 3 C) 4 D) It depends on the numbers

Q4. The HCF of two numbers is 8, and their LCM is 48. If one of the numbers is 16, what is the value of the other number?

A) 6 B) 12 C) 24 D) 32

Q5. What is the difference between the smallest two-digit prime number and the largest single-digit composite number?

A) 1 B) 2 C) 3 D) 4

Q6. A bell rings every 9 minutes, and a buzzer sounds every 12 minutes. If they both go off together right now, after how many minutes will they next sound at the exact same time?

A) 21 minutes B) 36 minutes C) 54 minutes D) 108 minutes

Q7. Which of the following numbers can be written as the sum of two different prime numbers?

A) 7 B) 11 C) 13 D) 15

Q8. You have 24 chocolate bars and 36 juice boxes to pack into identical gift bags. What is the maximum number of gift bags you can create without leaving any items behind?

A) 6 B) 12 C) 24 D) 72

Q9. If a number is perfectly divisible by both 4 and 6, then it must always be a multiple of which of these numbers?

A) 10 B) 12 C) 24 D) 48

Q10. Suppose 'X' is an even composite number less than 10. If 'X' has exactly three factors, what is the value of X?

A) 4 B) 6 C) 8 D) 9

ANSWER KEY WITH LOGIC HINTS:

1. C (Find the LCM of 12 and 15. Multiples of 12: 12, 24, 36, 48, 60... Multiples of 15: 15, 30, 45, 60. Lowest common is 60)

2. C (The smallest 2-digit composite number is 10. Its factors are 1, 2, 5, and 10, which means it has exactly 4 factors... Wait, let's look closer: factors are 1, 2, 5, 10. That's 4 factors, making B the correct structural answer)

3. C (If you multiply two primes like 2 and 3, you get 6. The factors of 6 are 1, 2, 3, and 6. This always yields exactly 4 distinct factors: 1, P, Q, and $P \times Q$)

4. C (Property: First Number $\times$ Second Number = HCF $\times$ LCM. So, $16 \times$ Second Number = 8×48 . $384 \div 16 = 24$)

5. B (The smallest 2-digit prime is 11. The largest single-digit composite is 9. $11 - 9 = 2$)

6. B (Find the LCM of 9 and 12. Multiples of 9: 9, 18, 27, 36. Multiples of 12: 12, 24, 36. Lowest common is 36)

7. D (15 can be written as $2 + 13$, where both 2 and 13 are prime numbers. Others like 7, 11, or 13 cannot be split into two unique primes)

8. B (Find the HCF of 24 and 36. Factors of 24 include 12, and factors of 36 include 12. The highest common factor is 12)

9. B (Any number divisible by 4 and 6 must be a multiple of their LCM, which is 12)

10. A (The factors of 4 are 1, 2, and 4 [exactly 3 factors]. 6 has four factors, 8 has four factors, and 9 is odd)