

# VIDYA BHAWAN BALIKA VIDYA PITH

## शक्तिउत्थानआश्रमलखीसरायबिहार

Class :-06(Maths)

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**6. Find all the prime factors of 1729 and arrange them in ascending order. Now state the relation, if any; between two consecutive prime factors.**

**Solutions:**

7	1729
13	247
19	19
	1

$$1729 = 7 \times 13 \times 19$$

$$13 - 7 = 6$$

$$19 - 13 = 6$$

Hence, the difference between two consecutive prime factors is 6.

**7. The product of three consecutive numbers is always divisible by 6. Verify this statement with the help of some examples.**

**Solutions:**

(i)  $2 \times 3 \times 4 = 24$  which is divisible by 6

(ii)  $5 \times 6 \times 7 = 210$  which is divisible by 6

**8. The sum of two consecutive odd numbers is divisible by 4. Verify this statement with the help of some examples.**

**Solutions:**

(i)  $5 + 3 = 8$  which is divisible by 4

(ii)  $7 + 9 = 16$  which is divisible by 4

(iii)  $13 + 15 = 28$  which is divisible by 4

**9. In which of the following expressions, prime factorisation has been done?**

(a)  $24 = 2 \times 3 \times 4$

(b)  $56 = 7 \times 2 \times 2 \times 2$

(c)  $70 = 2 \times 5 \times 7$

(d)  $54 = 2 \times 3 \times 9$

**Solutions:**

(a)  $24 = 2 \times 3 \times 4$

Since, 4 is composite. Hence, prime factorisation has not been done

(b)  $56 = 7 \times 2 \times 2 \times 2$

Since, all the factors are prime. Hence, prime factorisation has been done

(c)  $70 = 2 \times 5 \times 7$

Since, all the factors are prime. Hence, prime factorisation has been done

(d)  $54 = 2 \times 3 \times 9$

Since, 9 is composite. Hence prime factorisation has not been done

**10. Determine if 25110 is divisible by 45. [Hint: 5 and 9 are co-prime numbers. Test the divisibility of the number by 5 and 9].**

**Solutions:**

$$45 = 5 \times 9$$

1, 5 are factors of 5

1, 3, 9 are factors of 9

Hence, 5 and 9 are co-prime numbers

The last digit of 25110 is 0. Hence, it is divisible by 5

Sum of digits 25110

$$2 + 5 + 1 + 1 + 0$$

$$= 9$$

Since, the sum of digits of 25110 is divisible by 9. Hence, 25110 is divisible by 9

Since the number is divisible by both 5 and 9

Therefore 25110 is divisible by 45