

## Exercise 2A

## Q8

#### Answer:

(i) 87

The divisors of 87 are 1, 3, 29 and 87 i.e. 87 has more than 2 factors. Therefore 87 is not a prime number.

(ii) 89

The divisors of 89 are 1 and 89. Therefore 89 is a prime number.

(iii) 63

The divisors of 63 are 1, 3, 7, 9, 21 and 63 i.e. 63 has more than 2 factors. Therefore 63 is not a prime number.

(iv) 91

The divisors of 91 are 1, 7, 13 and 91 i.e. 91 has more than 2 factors. Therefore 91 is not a prime number

#### Q9

## Answer:

90, 91, 92, 93, 94, 95 and 96 are seven consecutive numbers and none of them is a prime.

# Q10

#### Answer:

- (i) No, there are no counting numbers with no factors at all because every number has at least two factors, i.e., 1 and itself.
- (ii) There is only one number that has exactly one factor, i.e, 1.
- (iii) The numbers between 1 and 100 that have exactly three factors are 4, 9, 25 and 49.

# Q12

#### Answer:

Two consecutive odd prime numbers are called twin primes.

The pairs of twin primes between 50 to 100 are (59, 61) and (71, 73).

## Q13

## Answer:

If two numbers do not have a common factor other than 1, they are said to be co-primes.

Five pairs of co primes: (i) 2 and 3 (ii) 3 and 4 (iii) 4 and 5 (iv) 4 and 9 (v) 8 and 15

No, co-primes are not always primes.

For example, 3 and 4 are co-prime numbers, where 3 is a prime number and 4 is not a prime number.

# Q14

# Answer:

- (i) 36
- 36 as the sum of two odd prime numbers is (36 = 31 + 5).
- (ii) 42
- 42 as the sum of two odd prime numbers is (42 = 31 + 11).
- (iii) 84
- 84 as the sum of two odd prime numbers is (84 = 41 + 43).
- (iv) 98
- 98 as the sum of two odd prime numbers is (98 = 31 + 67).

## Q15

#### Answer:

- (i) 31
- 31 can be expressed as the sum of three odd prime numbers as (31 = 5 + 7 + 19).
- (ii) ) 35
- 35 can be expressed as the sum of three odd prime numbers as (35 = 17 + 13 + 5).
- (iii) 49
- 49 can be expressed as the sum of three odd prime numbers as (49 = 13 + 17 + 19).
- (iv) 63
- 63 can be expressed as the sum of three odd prime numbers as (63 = 29 + 31 + 3).

## Q16

#### Answer:

- (i) 36
- 36 can be expressed as the sum of twin primes as (36 = 17 + 19).
- (ii) 84
- 84 can be expressed as the sum of twin primes as (84 = 41 + 43).
- (iii) 120
- 120 can be expressed as the sum of twin primes as (120 = 59 + 61).
- (iv) 144
- 144 can be expressed as the sum of twin primes as (144 = 71 + 73).

#### Q17

# Answer:

- (i) False. 2 is the smallest prime number.
- (ii) False. 2 is an even prime number.
- (iii) False. 3 and 7 are two prime numbers and their sum is 10, which is even.
- (iv) False. 4 and 9 are co-primes but neither of them is a prime number.

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