

Board –CBSE

Class – 6th

Topic –Playing with Number Ex:3.2

Exercise – 3.2

Q.1 What is the sum of any two:

- (a) Odd numbers?
- (b) Even numbers?

Sol. (a) The sum of any two odd numbers is even.
(b) The sum of any two even numbers is even.

Q2. State whether the following statements are True or False.

- (a) The sum of three odd numbers is even.
- (b) The sum of two odd numbers and one even number is even.
- (c) The product of three odd numbers is odd.
- (d) If an even number is divided by 2, the quotient is always odd.
- (e) All prime numbers are odd.
- (f) Prime numbers do not have any factors.
- (g) Sum of two prime numbers is always even.
- (h) 2 is only the even prime number.
- (i) All even numbers are composite numbers.
- (j) The product of any two even numbers is always even.

Sol. (a) False [$\because 3 + 5 + 7 = 15$ (odd)]
(b) True [$\because 3 + 5 + 6 = 14$ (even)]
(c) True [$\because 5 \times 7 \times 9 = 315$ (odd)]
(d) False [$\because 6 \div 2 = 3$ (odd)]
(e) False [$\because 2$ is a prime number but it is even]
(f) False [$\because 3$ is a prime number having 1 and 3 as its factors]
(g) False [$\because 7 + 2 = 9$ (odd)]
(h) True [$\because 2$ is even and the lowest prime number]
(i) False [$\because 2$ is even but not composite number]
(j) True [$\because 4 \times 6 = 24$ (even)]

Q3. The numbers 13 and 31 are prime numbers. Both these numbers have the same digits 1 and 3. Find such pairs of prime numbers up to 100.

Sol. The required pair of prime numbers having the same digits are:

(17 and 71), (37 and 73), (79 and 97).

Q4. Write down separately the prime and composite numbers less than 20.

Sol. Prime numbers less than 20 are:

2, 3, 5, 7, 11, 13, 17 and 19

Composite numbers less than 20 are:

4, 6, 8, 9, 10, 12, 14, 15, 16 and 18

Q5. What is the greatest prime number between 1 and 10?

Sol. The greatest prime number between 1 and 10 is 7.

Q6. Express the following as the sum of two odd primes.

(a) 44

(b) 36

(c) 24

(d) 18

Sol. (a) $44 = 13 + 31$

(b) $36 = 17 + 19$

(c) $24 = 7 + 17$

(d) $18 = 7 + 11$

Q7. Give three pairs of prime numbers whose difference is 2.

[Remark: Two prime numbers whose difference is 2 are called twin primes]

Sol. Required pairs are: (3 and 5), (5 and 7), and (11 and 13)

Q8. Which of the following numbers are prime?

(a) 23

(b) 51

(c) 37

(d) 26

Sol. (a) 23 is a prime number [$\because 23 = 1 \times 23$]

(b) 51 is not a prime number [$\because 51 = 1 \times 3 \times 17$]

(c) 37 is a prime number [$\because 37 = 1 \times 37$]

(d) 26 is not a prime number [$\because 26 = 1 \times 2 \times 13$]

Q9. Write seven consecutive composite numbers less than 100 so that there is no prime number between them.

Sol. Required seven consecutive composite numbers are:

90, 91, 92, 93, 94, 95 and 96

Q10. Express each of the following numbers as the sum of three odd primes.

(a) 21

(b) 31

(c) 53

(d) 61

Sol. (a) 21 can be expressed as $3 + 5 + 13$

(b) 31 can be expressed as $5 + 7 + 19$

(c) 53 can be expressed as $13 + 17 + 23$

(d) 61 can be expressed as $11 + 13 + 37$

Q11. Write five pairs of prime numbers less than 20 whose sum is divisible by 5.

(Hint: $3 + 7 = 10$)

Sol. Required pairs of prime numbers less than 20 are:

(i) $2 + 3 = 5$

(ii) $2 + 13 = 15$

(iii) $11 + 9 = 20$

(iv) $17 + 3 = 20$

(v) $7 + 13 = 20$

Q12. Fill in the blanks.

(a) A number that has only two factors is called a

(b) A number that has more than two factors is called a

(c) 1 is neither nor

(d) The smallest prime number is

(e) The smallest composite number is

(f) The smallest even number is

Sol. (a) prime number

(b) composite number

(c) prime, composite

(d) 2

(e) 4

(f) 2