CHAPTER 2
PLAYING WITH NUMBERS

1. Write all the factors of the following numbers :
(a) 24
(b) 15
(c) 21
(d) 27
(e) 12
(f) 20
(g) 18
(h) 23
(i) 36

Answer

(a) 1 × 24 = 24
2 × 12 = 24
3 × 8 = 24
4 × 6 = 24
6 × 4 = 24
8 × 3 = 24
12 × 2 = 24
24 = 24 × 1
1,2,3,4,6,8,12 and 24 are the factors of 24.

(b) 1 × 15 =15
3 × 5 = 15
5 × 3 = 15
15 × 1 = 15
1,3,5 and 15 are the factors of 15.

(c) 1× 21 = 21
3 × 7 = 21
7 × 3 = 21
1, 3 and 7 are the factors of 21

(d) 1 × 27 = 27
3 × 9 = 27
9 × 3 = 27
1, 27, 3 and 9 are the factors of 27

(e) 1 × 12 = 12
2 × 6 = 12

$3 \times 4 = 12$
$4 \times 3 = 12$
$6 \times 2 = 12$
$12 \times 1 = 12$
1, 2,3,4,6 and 12 are the factors of 12.

(f) $1 \times 20 = 20$
$2 \times 10 = 20$
$4 \times 5 = 20$
$5 \times 4 = 20$
$10 \times 2 = 20$
$20 \times 1 = 20$
1, 2, 4, 5, 10 and 20 are the factors of 20.

(g) $1 \times 18 = 18$
$2 \times 9 = 18$
$3 \times 6 = 18$
$6 \times 3 = 18$
$9 \times 2 = 18$
1,2,3,6 and 9 are the factors of 18.

(h) $1 \times 23 = 23$
$23 \times 1 = 23$
1 and 23 are the factors of 23.

(i) $1 \times 36 = 36$
$2 \times 18 = 36$
$3 \times 12 = 36$
$4 \times 9 = 36$
$6 \times 6 = 36$
$9 \times 4 = 36$
$12 \times 3 = 36$
$18 \times 2 = 36$
$36 \times 1 = 36$
1,2,3,4,6,9,12,18 and 36 are the factors of 36.

2. Write first five multiples of :
(a) 5
(b) 8
(c) 9

Answer

(a) Five multiples of 5 are

$5 \times 1 = 5$
$5 \times 2 = 10$
$5 \times 3 = 15$
$5 \times 4 = 20$
$5 \times 5 = 25$

(b) Five multiples of 8 are
$8 \times 1 = 8$
$8 \times 2 = 16$
$8 \times 3 = 24$
$8 \times 4 = 32$
$8 \times 5 = 40$

(c) Five multiples of 9
$9 \times 1 = 9$
$9 \times 2 = 18$
$9 \times 3 = 27$
$9 \times 4 = 36$
$9 \times 5 = 45$

3. Match the items in column 1 with the items in column 2.

Answer

(i) → (b) Multiple of 7
(ii) → (d) Factor of 30
(iii) → (a) Multiple of 8
(iv) → (f) Factor of 20
(v) → (e) Factor of 50

4. Find all the multiples of 9 up to 100.

Answer

$9 \times 1 = 9$, $9 \times 2 = 18$, $9 \times 3 = 27$, $9 \times 4 = 36$, $9 \times 5 = 45$, $9 \times 6 = 54$, $9 \times 7 = 63$, $9 \times 8 = 72$, $9 \times 9 = 81$, $9 \times 10 = 90$, $9 \times 11 = 99$
Multiples of 9 up to 100 are: 9, 18, 27, 36, 45, 54, 63, 72, 81, 90, and 99

1. What is the sum of any two
(a) Odd numbers
(b) Even numbers

Answer

(a) 11 + 13 = 24
Sum of two odd number is always even.

(b) 12 + 14 = 26
Sum of two even number is always even.

2. 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 the only even prime number.
(i) All even numbers are composite numbers.
(j) The product of two even numbers is always even.

Answer

(a) 5+7+9 = 21 (false)
(b) 5+7+8 = 20 (true)
(c) 3 × 5 × 7 = 105 (true)
(d) 4 ÷ 2 = 2 (false)
(e) 2 is a prime number and it is also even
(f) false
(g) false
(h) true
(i) false
(j) true

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

Answer

17, 71
37, 23
79, 97

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

Answer

Prime numbers which are less than 20:
2, 3, 5, 7, 11, 13, 17, 19

Composite numbers which are less than 20:
4, 6, 8, 9, 10, 12, 14, 15, 16, 18

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

Answer

1 and 10 prime number are 2, 3, 5, and 7.
7 is the greatest.

6. Express the following as the sum of two odd primes.
(a) 44
(b) 36
(c) 24
(d) 18

Answer

(a) 37 + 7 = 44
(b) 31 + 5 = 36
(c) 19 + 5 = 24
(d) 11 + 7 = 18

7. Give three pairs of prime numbers whose difference is 2.
[Remark : Two prime numbers whose difference is 2 are called twin primes].

Answer

3, 5
41, 43
71, 73

8. Which of the following numbers are prime?
(a) 23
(b) 51
(c) 37
(d) 26

Answer

(a) $23 = 1 \times 23 = 23$, $23 \times 1 = 23$

(b) $51 = 1 \times 51 = 51$, $3 \times 17 = 51$, $17 \times 3 = 51$, $51 \times 1 = 51$
1,3,17,51 they are not prime number.

(c) $37 = 1 \times 37 = 37$, $37 \times 1 = 37$. They are prime number.

(d) $26 = 1 \times 26 = 26$, $2 \times 13 = 26$, $13 \times 2 = 26$, $26 \times 1 = 26$. They are not prime number.

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

Answer

90 , 91 , 92 , 93 , 94 ,95 and 96 are seven consecutive composite number less than 100 and there is no prime number between them.

10. Express each of the following numbers as the sum of three odd primes:
(a) 21
(b) 31
(c) 53
(d) 61

Answer

(a) $3 + 7 + 11 = 21$
(b) $5 + 7 + 19 = 31$
(c) $3 + 19 + 31 = 53$
(d) $11 + 19 + 31 = 61$

11. Write five pairs of prime numbers less than 20 whose sum is divisible by 5. (Hint : 3+7 = 10)

Answer

(i) $2 + 3 = 5$
(ii) $2 + 13 = 15$
(iii) $3 + 17 = 20$
(iv) $7 + 13 = 20$
(v) $19 + 11 = 30$

12.Fill in the blanks :
(a) A number which has only two factors is called a .
(b) A number which 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 _____.

Answer

(a) Prime number
(b) Composite number
(c) Prime number
(d) 2
(e) 4
(f) 2