

**RD SHARMA**

**Solutions**

**Class 6 Maths**

**Chapter 2**

**Ex 2.1**

**1.) Define:**

**Answer:**

**(i) Factor:** A factor of a number is an exact divisor of that number. For example, 4 exactly divide 32. Therefore, 4 is a factor of 32.

Examples of factors are:

2 and 3 are factors of 6 because  $2 \times 3 = 6$

2 and 4 are factors of 8 because  $2 \times 4 = 8$

3 and 4 are factors of 12 because  $3 \times 4 = 12$

3 and 5 are factors of 15 because  $3 \times 5 = 15$

**(ii) Multiple:** When a number 'a' is multiplied by another number 'b', the product is the multiple of both the numbers 'a' and 'b'.

Examples of multiples:

6 is a multiple of 2 because  $2 \times 3 = 6$

8 is a multiple of 4 because  $4 \times 2 = 8$

12 is a multiple of 6 because  $6 \times 2 = 12$

21 is a multiple of 7 because  $7 \times 3 = 21$

**2.) Write all factors of each of the following numbers:**

**Answer:**

**(i) 60**

$$60 = 1 \times 60$$

$$60 = 2 \times 30$$

$$60 = 3 \times 20$$

$$60 = 4 \times 15$$

$$60 = 5 \times 12$$

$$60 = 6 \times 10$$

The factors of 60 are 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30 and 60.

**(ii) 76**

$$76 = 1 \times 76$$

$$76 = 2 \times 38$$

$$76 = 4 \times 19$$

Therefore, The factors of 76 are 1, 2, 4, 19, 38 and 76.

**(iii) 125**

$$125 = 1 \times 125$$

$$125 = 5 \times 25$$

Therefore, the factors of 125 are 1, 5, 25 and 125.

**(iv) 729**

$$729 = 1 \times 729$$

$$729 = 3 \times 243$$

$$729 = 9 \times 81$$

$$729 = 27 \times 27$$

Therefore, the factors of 729 are 1, 3, 9, 27, 81, 243 and 729.

**3.) Write first five multiples of each of the following numbers:**

**Answer:**

**(i) 25**

The first five multiples of 25 are as follows:

$$25 \times 1 = 25$$

$$25 \times 2 = 50$$

$$25 \times 3 = 75$$

$$25 \times 4 = 100$$

$$25 \times 5 = 125$$

**(ii) 35**

The first five multiples of 35 are as follows:

$$35 \times 1 = 35$$

$$35 \times 2 = 70$$

$$35 \times 3 = 105$$

$$35 \times 4 = 140$$

$$35 \times 5 = 175$$

**(iii) 45**

The first five multiples of 45 are as follows:

$$45 \times 1 = 45$$

$$45 \times 2 = 90$$

$$45 \times 3 = 135$$

$$45 \times 4 = 180$$

$$45 \times 5 = 225$$

**(iv) 40**

The first five multiples of 40 are as follows:

$$40 \times 1 = 40$$

$$40 \times 2 = 80$$

$$40 \times 3 = 120$$

$$40 \times 4 = 160$$

$$40 \times 5 = 200$$

**4.) Which of the following number have 15 as their factor?**

**Answer:**

**(i) 15625**

15 is not a factor of 15,625 because it is not a divisor of 15,625.

**(ii) 123015**

15 is a factor of 1,23,015 because it is a divisor of 1,23,015. i.e.,  $8,201 \times 15 = 1,23,015$

**5.) Which of the following number are divisible by 21?**

**Answer:**

We know that a given number is divisible by 21 if it is divisible by each of its factors. The factors of 21 are 1, 3, 7 and 21.

**(i) 21063**

Sum of the digits of the given number =  $2 + 1 + 0 + 6 + 3 = 12$  which is divisible by 3.

Hence, 21,063 is divisible by 3.

Again, a number is divisible by 7 if the difference between twice the one's digit and the number formed by the other digits is either 0 or a multiple of 7.  $2,106 - (2 \times 3) = 2,100$  which is a multiple of 7. Thus, 21,063 is divisible by 21.

**(ii) 20163**

Sum of the digits of the given number =  $2 + 0 + 1 + 6 + 3 = 12$  which is divisible by 3. Hence, 20,163 is divisible by 3.

Again, a number is divisible by 7 if the difference between twice the one's digit and the number formed by the other digits is either 0 or multiple of 7.  $2016 - (2 \times 3) = 2010$  which is not a multiple of 7. Thus, 20,163 is not divisible by 21.

**6.) Without actual division show that 11 is a factor of each of the following numbers:**

**Answer:**

**(i) 1,111**

The sum of the digits at the odd places =  $1 + 1 = 2$

The sum of the digits at the even places =  $1 + 1 = 2$

The difference of the two sums =  $2 - 2 = 0$

Therefore, 1,111 is divisible by 11 because the difference of the sums is zero.

**(ii) 11,011**

The sum of the digits at the odd places =  $1 + 0 + 1 = 2$

The sum of the digits at the even places =  $1 + 1 = 2$

The difference of the two sums =  $2 - 2 = 0$

Therefore, 11,011 is divisible by 11 because the difference of the sums is zero.

**(iii) 1, 10,011**

The sum of the digits at the odd places =  $1 + 0 + 1 = 2$

The sum of the digits at the even places =  $1 + 0 + 1 = 2$

The difference of the two sums =  $2 - 2 = 0$

Therefore, 1, 10,011 is divisible by 11 because the difference of the sums is zero.

**(iv) 11, 00,011**

the sum of the digits at the odd places =  $1 + 0 + 0 + 1 = 2$

The sum of the digits at the even places =  $1 + 0 + 1 = 2$

The difference of the two sums =  $2 - 2 = 0$

Therefore, 11, 00,011 is divisible by 11 because the difference of the sums is zero.

**7.) Without actual division show that each of the following numbers is divisible by 5:**

**Answer:**

A number will be divisible by 5 if the unit's digit of that number is either 0 or 5.

**(i) 5**

In 55, the unit's digit is 5. Hence, it is divisible by 5.

**(ii) 555**

In 555, the unit's digit is 5. Hence, it is divisible by 5.

**(iii) 5555**

In 5,555, the unit's digit is 5. Hence, it is divisible by 5.

**(iv) 50,005**

In 50,005, the unit's digit is 5. Hence, it is divisible by 5.

**8.) Is there any natural number having no factor at all?**

**Answer:**

No, because each natural number is a factor of itself

**9.) Find numbers between 1 and 100 having exactly three factors**

**Answer:**

The numbers between 1 and 100 having exactly three factors are 4, 9, 25, and 49.

The factors of 4 are 1, 2 and 4.

The factors of 9 are 1, 3 and 9.

The factors of 25 are 1, 5 and 25.

The factors of 49 are 1, 7 and 49.

**10.) Sort out even and odd numbers:**

**Answer:**

A number which is exactly divisible by 2 is called an even number. Therefore, 42 and 144 are even numbers.

A number which is not exactly divisible by 2 is called an odd number. Therefore, 89 and 321 are odd numbers.