

GW
30.6.21

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Exercise 9(B)

1. ~~Q.1~~ Fill in the blanks:

i) On dividing 9 by 7, quotient = 1 and remainder = 2.

ii) On dividing 18 by 6, quotient = 3 and remainder = 0.

iii) Factor of a number is an exact divisor of that number.

iv) Every number is a factor of itself.

v) Every number is a multiple of itself.

vi) 1 (one) is factor of every number.

vii) For every number, its factors are finite and its multiples are infinite.

viii) x is a factor of y , then y is a multiple of x .

2. Write all the factors of:

i) 16

Ans - All factors of 16 are:

$$16 = 1, 2, 4, 8, \text{ and } 16$$

ii) 21

Ans - All factors of 21 are:

$$21 = 1, 3, 7, \text{ and } 21$$

iii) 39

Ans - All factors of 39 are:

$$39 = 1, 3, 13, 39$$

iv) 48

Ans - All factors of 48 are:

$$48 = 1, 2, 3, 4, 6, 8, 12, 16, 24, 48$$

v) 64

Ans - All factors of 64 are:

$$64 = 1, 2, 4, 8, 16, 32, 64$$

vi) 98

Ans - All factors of 98 are:

$$98 = 1, 2, 7, 14, 49, 98$$

3. Write the first six multiples of:

i) 4

Ans- Following are the first six multiples of 4

$$1 \times 4 = 4, 2 \times 4 = 8, 3 \times 4 = 12, 4 \times 4 = 16, 5 \times 4 = 20, 6 \times 4 = 24$$

Hence, multiples of 4 are 4, 8, 12, 16, 20 and 24

ii) 9

Ans- Following are the first six multiples of 9

$$1 \times 9 = 9, 2 \times 9 = 18, 3 \times 9 = 27, 4 \times 9 = 36, 5 \times 9 = 45, 6 \times 9 = 54$$

Hence, multiples of 9 are 9, 18, 27, 36, 45 and 54.

iii) 11

Ans- Following are the first six multiples of 11

$$11 \times 1 = 11, 11 \times 2 = 22, 11 \times 3 = 33, 11 \times 4 = 44, 11 \times 5 = 55, 11 \times 6 = 66$$

Hence, multiples of 11 are 11, 22, 33, 44, 55, 66.

iv) 15

Ans- Following are the first six multiples of 15

$$1 \times 15 = 15, 2 \times 15 = 30, 3 \times 15 = 45, 4 \times 15 = 60, 5 \times 15 = 75, 6 \times 15 = 90$$

Hence, multiples of 15 are 15, 30, 45, 60, 75, 90.

v) 18

Ans- Following are the first six multiples of 18

$$1 \times 18 = 18, 2 \times 18 = 36, 3 \times 18 = 54, 4 \times 18 = 72, 5 \times 18 = 90,$$

$$6 \times 18 = 108$$

Hence, multiples of 18 are 18, 36, 54, 72, 90 and 108.

vi) 16

Ans- The following are the first six multiples of 16

$$1 \times 16 = 16, 2 \times 16 = 32, 3 \times 16 = 48, 4 \times 16 = 64, 5 \times 16 = 80, 6 \times 16 = 96$$

Hence, multiples of 16 are 16, 32, 48, 64, 80 and 96.

4. The product of two numbers is 36 and their sum is 13.
Find the numbers.

Ans- 36 can be written as

$$1 \times 36 = 36, 2 \times 18 = 36, 3 \times 12 = 36, 4 \times 9 = 36, 6 \times 6 = 36$$

Here the numbers are 4 and 9 as $4 \times 9 = 36$ and

The sum of 4 and 9 is 13

Hence, 4 and 9 are the two numbers.

5. The product of two numbers is 48 and their sum is 16. Find the numbers.

Ans- 48 can be written as

$$1 \times 48 = 48, 2 \times 24 = 48, 3 \times 16 = 48, 4 \times 12 = 48, 6 \times 8 = 48$$

Here the numbers are 4 and 12 as $4 \times 12 = 48$ and

The sum of 4 and 12 is 16.

Hence, 4 and 12 are the two numbers.

6. Write two numbers which differ by 3 and whose product is 54.

Ans- 54 can be written as

$$1 \times 54 = 54, 2 \times 27 = 54, 3 \times 18 = 54, 6 \times 9 = 54$$

Here the numbers are 6 and 9 as $6 \times 9 = 54$ and

The ~~sum~~ difference between 6 and 9 is 3.

Hence, 6 and 9 are the two numbers.

7. Without making any actual division show that 7007 is divisible by 7.

Ans- Given number = 7007

7007 can be written as

$$7007 = 7000 + 7$$

$$= 7 \times (1000 + 1)$$

$$= 7 \times 1001$$

Clearly 7007 is divisible by 7

\therefore 7007 is the multiple of 7

\therefore 7007 is the divisible by 7

8. Without making any actual division, show that 2300023 is divisible by 23.

Ans- Given number = 2300023
 2300023 can be written as

$$2300023 = 2300000 + 23 = 23 \times 100000 + 23 \times 1$$

$$= 23 \times (100000 + 1)$$

$$= 23 \times 100001$$

$$= 2300023$$

Clearly, 2300023 is divisible by 23.

9. Without making any actual division, show that each of the following number is divisible by 11.

i) 11011

Ans- Given number = 11011
 11011 can be written as

$$11011 = 11000 + 11 = 11 \times 1000 + 11 \times 1$$

$$= 11 \times (1000 + 1)$$

$$= 11 \times 1001$$

$$= 11011$$

Clearly, 11011 is divisible by 11

ii) 110011

Ans- Given number = 110011
 110011 can be written as

$$110011 = 110000 + 11 = 11 \times 10000 + 11 \times 1$$

$$= 11 \times (10000 + 1)$$

$$= 11 \times 10001$$

$$= 110011$$

Clearly, 110011 is divisible by 11.

110011 is a multiple of 11

∴ 110011 is divisible by 11.

(i) 11000011

Ans- Given number = 11000011

11000011 can be written as

$$\begin{aligned} 11000011 &= \cancel{11} * 1000000 + 11 = 11 \times 1000000 + 11 \times 1 \\ &= 11 \times (1000000 + 1) \\ &= 11 \times 1000001 \end{aligned}$$

Clearly, 11000011 is divisible by 11.

11000011 is a multiple of 11 so 11000011 is divisible by 11.

10. Without actual division, show that each of the following numbers is divisible by 8.

i) 1608

Ans- Given number = 1608

1608 can be written as

$$\begin{aligned} 1608 &= 1600 + 8 = 8 \times 200 + 8 \times 1 \\ &= \cancel{8} \times (200 + 1) \\ &= 8 \times 201 \\ &= 1608 \end{aligned}$$

because

Clearly 1608 is divisible by 8. \therefore 1608 is multiple of 8

ii) 56008

Ans- Given number = 56008

56008 can be written as

$$\begin{aligned} 56008 &= 56000 + 8 = 8 \times 7000 + 8 \times 1 \\ &= 8 \times (7000 + 1) \\ &= 8 \times 7001 \end{aligned}$$

because

Clearly 56008 is divisible by 8. \therefore 56008 is a multiple of 8.

iii) 240008

Ans- Given Number = 240008

240008 can be written as

$$\begin{aligned} 240008 &= 240000 + 8 = 8 \times 30000 + 8 \times 1 \\ &= 8 \times (30000 + 1) \\ &= 8 \times 30001 \end{aligned}$$

Clearly 240008 is divisible by 8, because

240008 is a multiple of 8.