

Mathematics

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(Chapter – 3) (Playing With Numbers)
(Class – VI)

Exercise 3.4

Question 1:

Find the common factors of:

- (a) 20 and 28 (b) 15 and 25 (c) 35 and 50 (d) 56 and 120

Answer 1:

- (a) Factors of 20 = 1, 2, 4, 5, 10, 20
Factors of 28 = 1, 2, 4, 7, 14, 28
Common factors = 1, 2, 4
(b) Factors of 15 = 1, 3, 5, 15
Factors of 25 = 1, 5, 25
Common factors = 1, 5
(c) Factors of 35 = 1, 5, 7, 35
Factors of 50 = 1, 2, 5, 10, 25, 50
Common factors = 1, 5
(d) Factors of 56 = 1, 2, 4, 7, 8, 14, 28, 56
Factors of 120 = 1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 60, 120
Common factors = 1, 2, 4, 8

Question 2:

Find the common factors of: (a) 4, 8 and 12 (b) 5, 15 and 25

Answer 2:

- (a) Factors of 4 = 1, 2, 4
Factors of 8 = 1, 2, 4, 8
Factors of 12 = 1, 2, 3, 4, 6, 12
Common factors of 4, 8 and 12 = 1, 2, 4
(b) Factors of 5 = 1, 5
Factors of 15 = 1, 3, 5, 15
Factors of 25 = 1, 5, 25
Common factors of 5, 15 and 25 = 1, 5

Question 3:

Find the first three common multiples of: (a) 6 and 8 (b) 12 and 18

Answer 3:

- (a) Multiple of 6 = 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72,
Multiple of 8 = 8, 16, 24, 32, 40, 48, 56, 64, 72,
Common multiples of 6 and 8 = 24, 48, 72
(b) Multiple of 12 = 12, 24, 36, 48, 60, 72, 84, 96, 108, 120,
Multiple of 18 = 18, 36, 54, 72, 90, 108,
Common multiples of 12 and 18 = 36, 72, 108

Question 4:

Write all the numbers less than 100 which are common multiples of 3 and 4.

Answer 4:

- Multiple of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60, 63, 66, 69, 72, 75, 78, 81, 84, 87, 90, 93, 96, 99
Multiple of 4 = 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80, 84, 88, 92, 96, 100
Common multiples of 3 and 4 = 12, 24, 36, 48, 60, 72, 84, 96

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Question 5:

Which of the following numbers are co-prime:

- (a) 18 and 35 (b) 15 and 37 (c) 30 and 415
(d) 17 and 68 (e) 216 and 215 (f) 81 and 16

Answer 5:

- (a) Factors of 18 = 1, 2, 3, 6, 9, 18

Factors of 35 = 1, 5, 7, 35

Common factor = 1

Since, both have only one common factor, i.e., 1, therefore, they are co-prime numbers.

- (b) Factors of 15 = 1, 3, 5, 15

Factors of 37 = 1, 37

Common factor = 1

Since, both have only one common factor, i.e., 1, therefore, they are co-prime numbers.

- (c) Factors of 30 = 1, 2, 3, 5, 6, 15, 30

Factors of 415 = 1, 5,, 83, 415

Common factor = 1, 5

Since, both have more than one common factor, therefore, they are not co-prime numbers.

- (d) Factors of 17 = 1, 17

Factors of 68 = 1, 2, 4, 17, 34, 68

Common factor = 1, 17

Since, both have more than one common factor, therefore, they are not co-prime numbers.

- (e) Factors of 216 = 1, 2, 3, 4, 6, 8, 36, 72, 108, 216

Factors of 215 = 1, 5, 43, 215

Common factor = 1

Since, both have only one common factor, i.e., 1, therefore, they are co-prime numbers.

- (f) Factors of 81 = 1, 3, 9, 27, 81

Factors of 16 = 1, 2, 4, 8, 16

Common factor = 1

Since, both have only one common factor, i.e., 1, therefore, they are co-prime numbers.

Question 6:

A number is divisible by both 5 and 12. By which other number will that number be always divisible?

Answer 6:

$5 \times 12 = 60$. The number must be divisible by 60.

Question 7:

A number is divisible by 12. By what other numbers will that number be divisible?

Answer 7:

Factors of 12 are 1, 2, 3, 4, 6 and 12.

Therefore, the number also be divisible by 1, 2, 3 4 and 6.