Class Notes

Class - V	Topic - Chapter – 6 Be My Multiple, I'll be your factor
Subject - Mathematics	

Note down the given works in your Maths Workbook.

D. Circle those numbers which have 60 as a multiple.

28	15	5	10
6	3	22	4
2	12	8	30
18	18	20	16

E. Colour the pair of numbers in which the second number is a multiple of the first.

(a) 7, 39 (b) 11, 99 (c) 9, 71

(d) 15, 65 (e) 13, 72 (f) 25, 175

F. Circle the multiples of 2 in RED.
Circle the multiples of 3 in BLUE.
Circle the multiples of 6 in GREEN.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30

Common multiples of 2, 3 and 6 are 6, 12, 18, 24, 30

G. Find the first two common multiples of :

(a) 9 and 12

Multiples of 9 → 9, 18, 27, 36, ---63, 72, 81--
Multiples of 12 → 12, 24, 36, ---60, 72, 84---
Common multiples of 9 & 12 → 36, 72
First 2 common multiples → 36 & 72

(b) 7 and 8

Multiples of 7 → 7, 14, 21 ---56, 63, --
Multiples of 8 → 8, 16, 24, ---48, 56---
First 2 common multiples of 7 and 8 → 56 and 112

(c) 4 and 5

Multiples of 4 → 4, 8, 12 ... 20, 24 ... 40, 44 ...
Multiples of 5 → 5, 10, 15 ... 20, 25, ... 40, 45 ...
First 2 common multiples of 4 and 5 → 20 and 40

(d) 9 and 12 X Repeated

H. Fill in the blanks:

(a) The 3rd multiple of 7 is 21.

(b) The 7th multiple of 13 is 91.

(c) The 6th multiple of 25 is 150.

(d) The 8th multiple of 15 is 120.

(e) The 5th multiple of 12 is 60.

(f) The 9th multiple of 9 is 81.

I. Find and write:

(a) The 2nd and 3rd common multiples of 4 and 5 are 40 and 60.

(b) The 3rd and 5th common multiples of 5 and 10 are 30 and 50.

(c) The 4th and 6th common multiples of 3 and 4 are 48 and 72.

(d) The 3rd and 4th common multiples of 4 and 6 are 36 and 48.

FACTORS

A. Colour the pairs in which the second number is a factor of the first number.

(a) 36, 9 (b) 45, 11 (c) 64, 8

(d) 49, 7 (e) 34, 6 (f) 82, 12

B. (a) $6 \times 5 = 30$, 6 and 5 are factors of 30.

(b) $12 \times 4 = 48$, 12 and 4 are factors of 48.

(c) $7 \times 4 = 28$, 7 and 4 are factors of 28.

(d) $11 \times 5 = 55$, 11 and 5 are factors of 55

(e) $4 \times 5 \times 6 = 120$, 4 5 and 6 are factors of 120

C. Circle the numbers which have 7 as a factor.

39 (42) 57 (63) (77) (14) 24 (35)

D. 9 is a factor of which of these numbers.

22, (27) (81) (18) 46 65 (54) (72) (45)

E. (a) $63 \div 9 = 7$, so 9 and 7 are factors of 63.

(b) $56 \div 7 = 8$, so 7 and 8 are factors of 56.

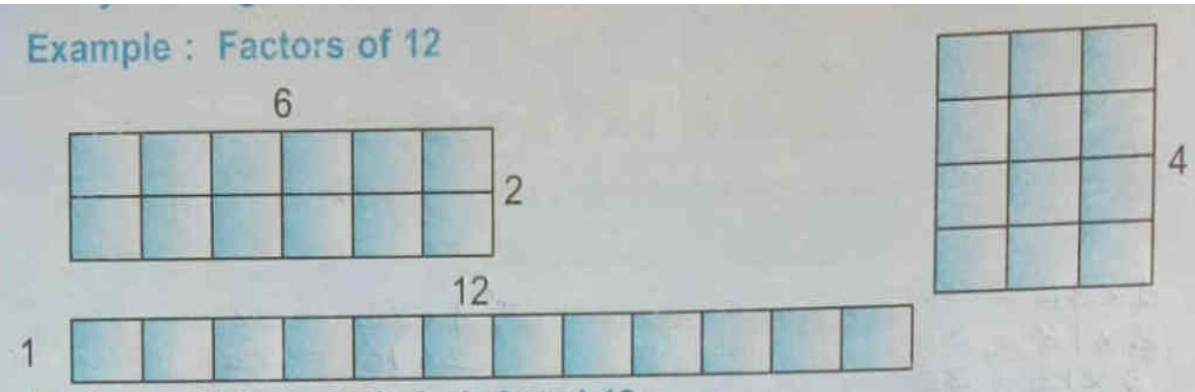
(c) $32 \div 8 = 4$, so 8 and 4 are factors of 32

(d) $96 \div 12 = 8$, so 12 and 8 are factors of 96

(e) $175 \div 25 = 7$, so 25 and 7 are factors of 175

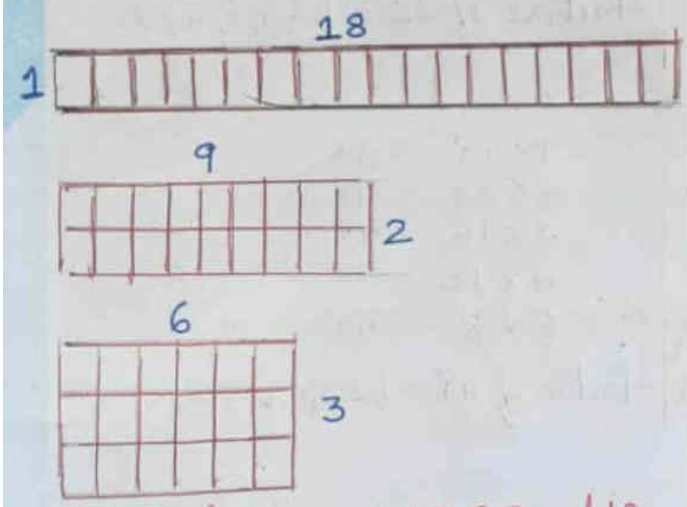
F. Find the factors of the following numbers by making them into as many rectangles as shown below.

Example : Factors of 12



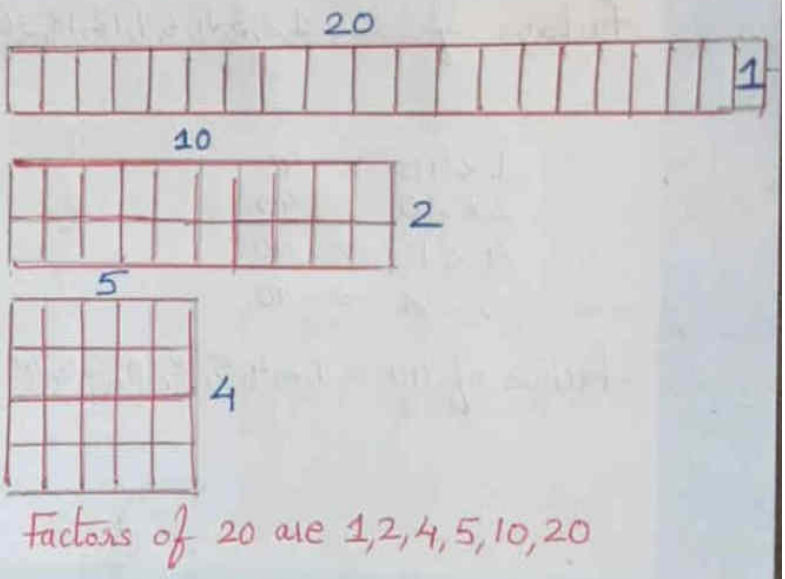
Factors of 12 are 1, 2, 3, 4, 6 and 12.

(a) 18



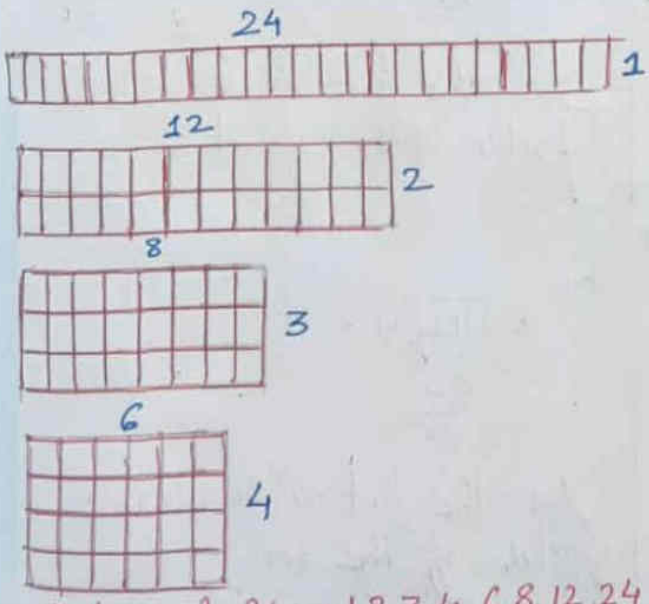
Factors of 18 are 1, 2, 3, 6, 9 and 18

(b) 20



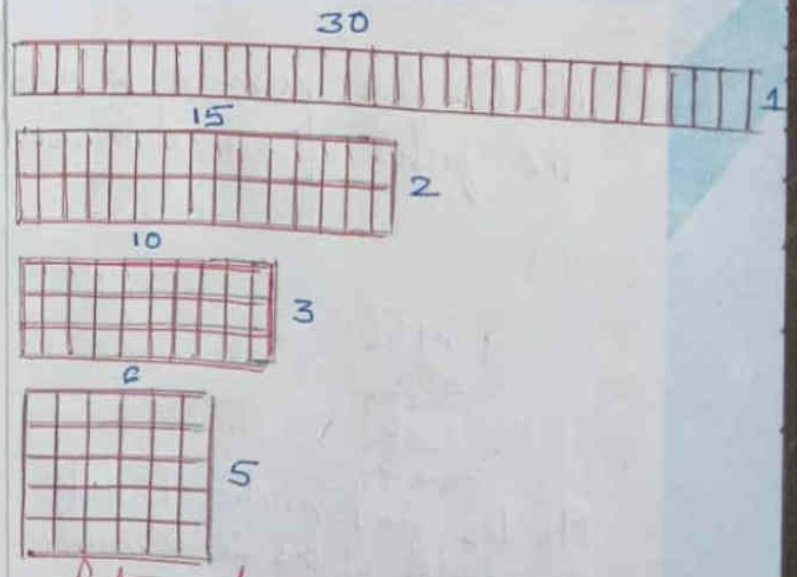
Factors of 20 are 1, 2, 4, 5, 10, 20

(c) 24



Factors of 24 → 1, 2, 3, 4, 6, 8, 12, 24

(d) 30



Factors of 30 are → 1, 2, 3, 5, 6, 10, 15 and 30

G. Find and write all the factors of the numbers using multiplication:

Example Factors of 12

$1 \times 12 = 12$

$2 \times 6 = 12$ Factors of 12 = 1, 2, 3, 4, 6, 12

$3 \times 4 = 12$

(a) 36

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

factors of 36 = 1, 2, 3, 4, 6, 9, 12, 18, 36

(b) 32

$1 \times 32 = 32$
$2 \times 16 = 32$
$4 \times 8 = 32$

factors of 32 = 1, 2, 4, 8, 16, 32

(c) 40

$1 \times 40 = 40$
$2 \times 20 = 40$
$4 \times 10 = 40$
$5 \times 8 = 40$

factors of 40 = 1, 2, 4, 5, 8, 10, 20, 40

(d) 48

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

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

H. Divide to find if the 1st number is a factor of the second number:

(a) 6, 38

$6\overline{)38}(6$
-36
$\overline{\times 2}$

No, the first number is not the factor of second number.

(b) 7, 84

$7\overline{)84}(12$
-84
$\overline{\times\times}$

Yes, the first number is the factor of the second number

(c) 9, 98

$9\overline{)98}(10$
-9
$\overline{\times 8}$
-0
$\overline{8}$

No, the first number is not the factor of the second number.

(d) 8, 112

$8\overline{)112}(14$
-8
$\overline{32}$
32
$\overline{\times\times}$

Yes, the first number is the factor of the second numbers.

PRIME AND COMPOSITE NUMBERS

A. Fill in the blanks:

(a) 1 is a unique number.

(b) 2 is the only even prime number.

(c) 3 is the smallest odd prime number.

(d) 9 is the smallest odd composite number.

(e) Every prime number has two factors. 1 and itself.

(f) A number that has more than 2 factors is called a composite number.

(g) Every prime number except 2 is odd.

(h) 1 is the smallest counting number.

(i) Two prime numbers whose difference is 2 are called twin prime numbers.

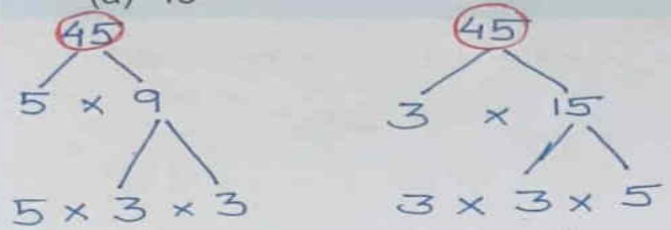
(j) Two consecutive prime numbers are 2 and 3.

(k) When you add 1 to any prime number (except 2) you get a even/composite number.

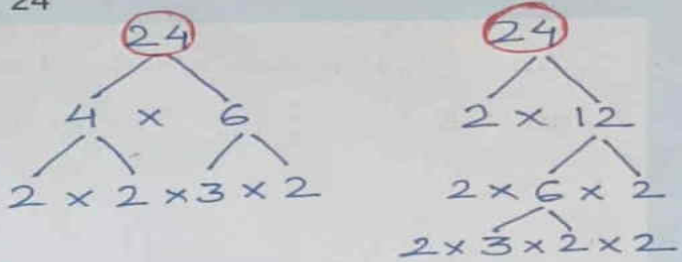
FACTOR TREES

A. Make factor trees in two different ways for the following numbers:

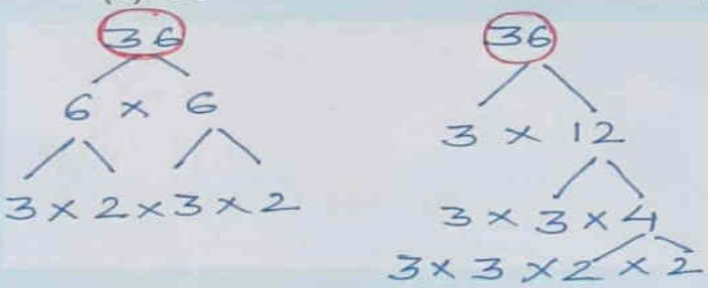
(a) 45



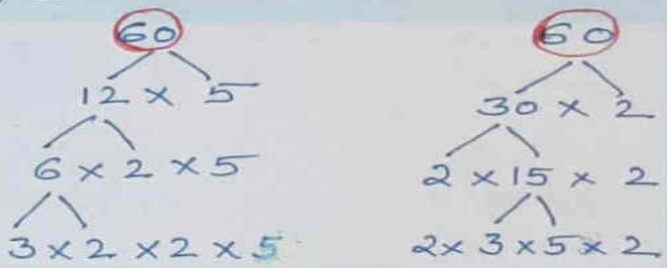
(b) 24



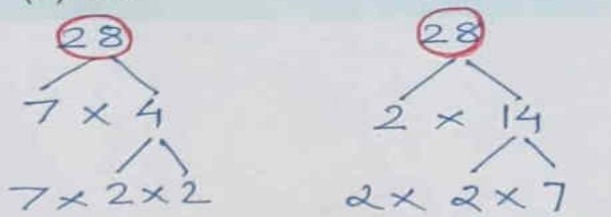
(c) 36



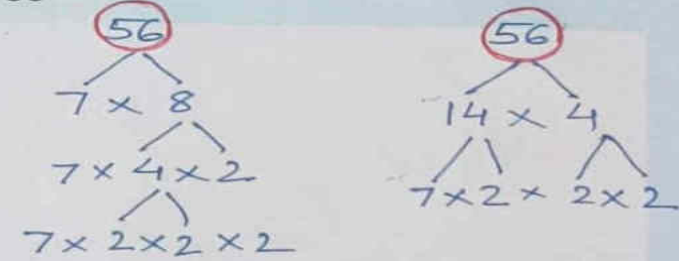
(d) 60



(e) 28



(f) 56

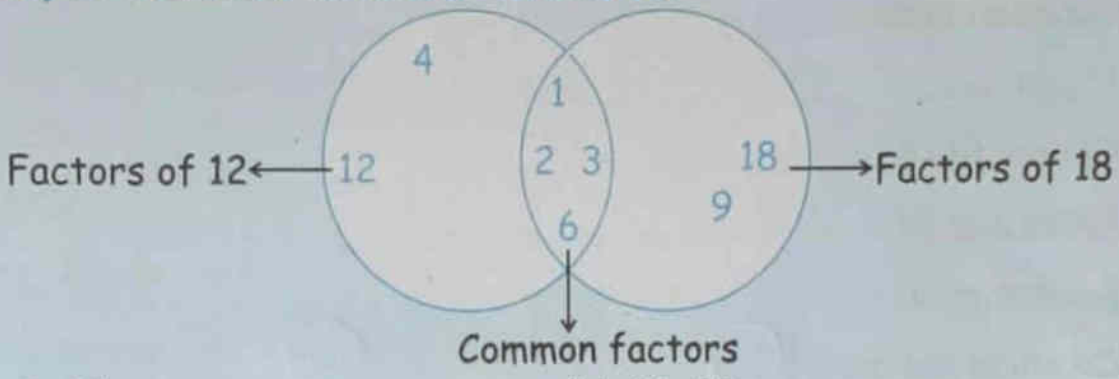


HIGHEST COMMON FACTOR (H.C.F.)

COMMON FACTORS

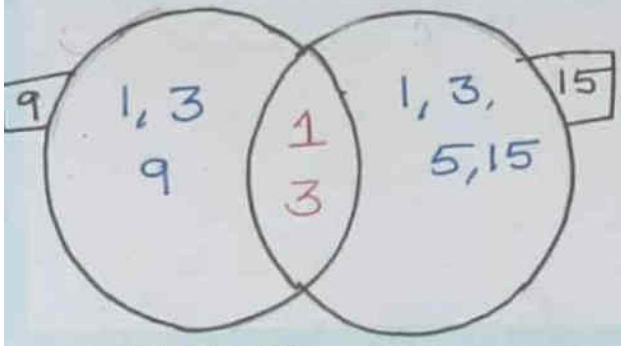
A. Find the common factors of the following numbers as shown below:

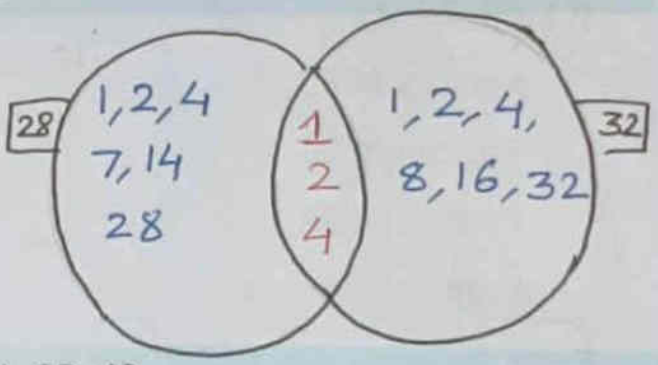
Example: Common factors of 12 and 18.



(a) 9, 15

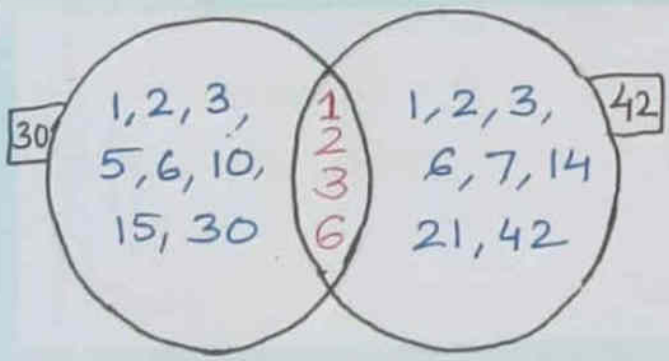
(b) 28, 32

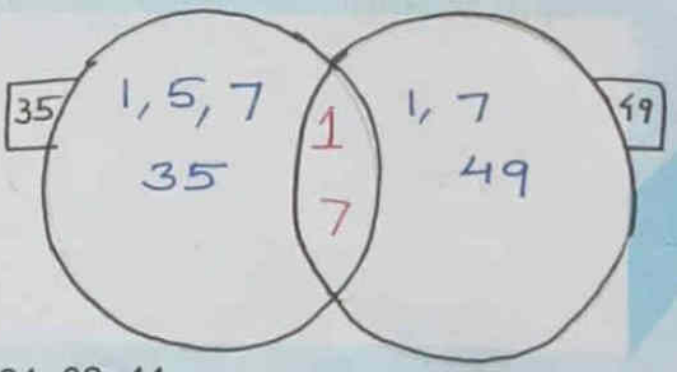




(c) 30, 42

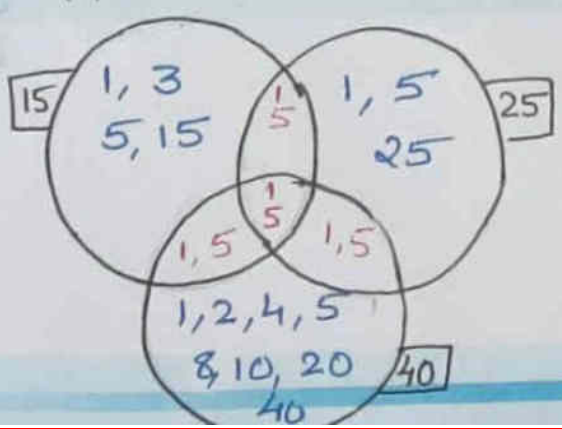
(d) 35, 49

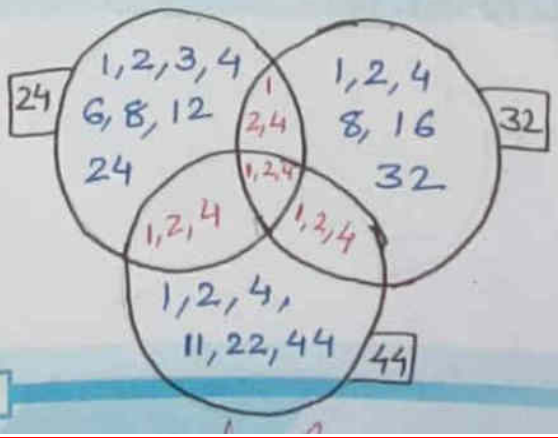




(e) 15, 25, 40

(f) 24, 32, 44





B. Complete the following. Find common factors.

(a) 19, 21

Factors of 19 → 1, 19

Factors of 21 → 1, 3, 7, 21

Common factors → (1)

(b) 16, 24, 36

Factors of 16 → 1, 2, 4, 8, 16

Factors of 24 → 1, 2, 3, 4, 6, 8, 12, 24

Factors of 36 → 1, 2, 3, 4, 6, 9, 12, 36

Common factors → (1, 2, 4)

(c) 66, 30, 18

Factors of 66 → 1, 2, 3, 6, 11, 22, 33, 66

Factors of 30 → 1, 2, 3, 5, 6, 10, 15, 30

Factors of 18 → 1, 2, 3, 6, 9, 18

Common factors → (1, 2, 3, 6)

H.C.F.

A. List all the factors of the following numbers to find their H.C.F.:

(a) 12, 30

Factors of 12 → 1, 2, 3, 4, 6, 12

Factors of 30 → 1, 2, 3, 5, 6, 10, 15, 30

Common factors → 1, 2, 3, 6

H.C.F. → (6)

(b) 16, 44, 84

Factors of 16 → 1, 2, 4, 8, 16

Factors of 44 → 1, 2, 4, 11, 22, 44

Factors of 84 → 1, 2, 3, 4, 6, 7, 12, 14, 21, 28, 42, 84

Common factors → 1, 2, 4

H.C.F. → (4)

(c) 24, 52, 42

Factors of 24 → 1, 2, 3, 4, 6, 8, 12, 24

Factors of 52 → 1, 2, 4, 13, 26, 52

Factors of 62 → 1, 2, 31, 62

Common factors → 1, 2

H.C.F → (2)

8. Find the L.C.M. of the following numbers by listing the multiples:

(a) 12, 15

Multiples of 12: 12, 24, 36, 48, (60), 72, 84, 96 - - - -

Multiples of 15: 15, 30, 45, (60), 75, 90, 105, 120 - - - -

L.C.M. = 60

(b) 6, 9, 12,

Multiples of 6: 6, 12, 18, 24, 30, (36), 42, 48 - - - -

Multiples of 9: 9, 18, 27, (36), 45, 54, 63, - - - -

Multiples of 12: 12, 24, (36), 48, 60, 72, - - - -

L.C.M. = 36

(c) 5, 8, 10

Multiples of 5: 5, 10, 15, 20, 25, 30, 35, (40), - - - -

Multiples of 8: 8, 16, 24, 32, (40), 48, 56, 64, - - -

Multiples of 10: 10, 20, 30, (40), 50, 60, 70, 80, - - -

L.C.M. = 40

Word Problems(Page No.- 87)

Solve the following word problems.

Q1. Which is the greatest number that divides 24 and 36 exactly?

Solution:- Greatest number that divides 24 and 36 exactly is HCF of 24 and 36. Factors of 24 = 1, 2, 3, 4, 6, 8, 12, 14

Factors of 36 = 1, 2, 3, 4, 6, 9, 12, 18, 36

Common factors = 1, 2, 3, 4, 6, 12

HCF = 12

⇒ 12 is the greatest number that divides 24 and 36 exactly.

Q2. Find the least number which is divisible exactly by the numbers 6, 9 and 12 ?

Solution:- The number is LCM of 6, 9, 12

Multiples of 6 = 6, 12, 18, 24, 30, 36, 42, 48

Multiples of 9 = 9, 18, 27, 36, 45, 54

Multiples of 12 = 12, 24, 36, 48, 60, 72

LCM = 36 ⇒ 36 is the least number exactly divisible by 6, 9 and 12.

Q3. Three bells ring at intervals of 10, 12 and 15 minutes. They rang together at 12 noon, when will they next ring together?

Solution:- It should be the LCM of 10, 12 and 15

Multiples of 10 = 10, 20, 30, 40, 50, 60, 70

Multiples of 12 = 12, 24, 36, 48, 60, 72, 84

Multiples of 15 = 15, 60, 45, 60, 75, 90

LCM = 60 ⇒ They ring together at every 60 minutes. So, at 1 PM

Q4. What is the largest number that divides 63, 35 and 77 leaving 7 as a remainder in each case?

Solution:- At first we should subtract 7 from each and then find the HCF. ⇒ 63 – 7 = 56, 35 – 7 = 28, 77 – 7 = 70

Factors of 56 = 1, 2, 4, 7, 8, 14, 28, 56

Factors of 28 = 1, 2, 4, 7, 14, 28

Factors of 70 = 1, 2, 5, 7, 10, 14, 35, 70

Common factors = 1, 2, 7, 14 So, the largest number is 14.

Q5. Two wires 15 cm and 25 cm in length are to be cut into smaller pieces of equal length. What can be the maximum length of each small wire?

Solution:- Maximum length of each wire = HCF of 15 and 25

Factors of 15 = 1, 3, 5, 15

Factors of 25 = 1, 5, 25

Common factors = 1, 5 HCF = 5

⇒ Maximum length of each wire = 5 cm each