MONTH : AUGUST

SESSION : 7

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : RELATION BETWEEN H.C.F. , L.C.M. AND NUMBERS, EXERCISE 8 D Q.NO.1

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LEARNING OBJECTIVE :

Enable the students

- **To Understand the concept of H.C.F. and L.C.M.**
- **To understand the relation between H.C.F. and L.C.M.**

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Relation between H.C.F. , L.C.M. and the numbers.

1. L.C.M. × H.C.F. = Product of the two numbers.

Explanation: Consider 6 and 8

STEP.1

2	6 , 8
	3 , 4

H.C.F. of 6 and 8 = 2

STEP.2

2	6 , 8
2	3 , 4
2	3 , 2
3	3 , 1
	1 , 1

L.C.M. of 6 and 8 = 2 × 2 × 2 × 3= 24

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Relation between H.C.F. , L.C.M. and the numbers.

L.C.M. × H.C.F. = 24 × 2 = 48

Product of the two numbers = 6 × 8 = 48

∴ L.C.M. × H.C.F. = Product of the two numbers.

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Relation between H.C.F. , L.C.M. and the numbers.

IMPORTANT RULES

i. L.C.M. of two numbers = $\frac{\text{Their product}}{\text{Their H.C.F.}}$

ii. H.C.F. of two numbers = $\frac{\text{Their product}}{\text{Their L.C.M.}}$

iii. $\frac{\text{L.C.M.} \times \text{H.C.F}}{\text{One number}}$ = The other number

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Relation between H.C.F. , L.C.M. and the numbers.

EXAMPLE- 1 :

The H.C.F. of two number is 28 and their L.C.M. is 336. if one number is 112 , find the other number.

Solution:

$$\frac{\text{L.C.M.} \times \text{H.C.F}}{\text{One number}} = \text{The other number}$$

$$\Rightarrow \text{the other number} = \frac{28 \times \cancel{336}^{3}}{\cancel{112}} = 28 \times 3 = 84 \text{ Ans.}$$

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EXERCISE 8 [D]

1. Find the H.C.F. and L.C.M. of the following numbers.

a. 576 and 1440

H.C.F.

$$
\begin{array}{r|l}
 & 2 \\
\hline
576 & 1440 \\
 & 1152 \\
\hline
 & 2 \\
\hline
288 & 576 \\
 & 576 \\
\hline
 & 0
\end{array}
$$

H.C.F. of 576 and 1440 = 288

EXERCISE 8 [D]

1. Find the H.C.F. and L.C.M. of the following numbers.

a. 576 and 1440

L.C.M.

2	576 , 1440
2	288 , 720
2	144 , 360
3	72 , 180
3	24 , 60
2	8 , 20
2	4 , 10
2	2 , 5
5	1 , 5
	1 , 1

L.C.M. of 576 and 1440 = 2 × 2 × 2 × 2 × 2 × 2 × 3 × 3 × 5 = **2880**

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EXERCISE 8 [D]

1. Find the H.C.F. and L.C.M. of the following numbers.

b. 496 and 1116

H.C.F.

$$
\begin{array}{r|l}
 & 2 \\
\hline
496 & 1116 \\
 & 992 \\
\hline
 & 4 \\
\hline
124 & 496 \\
 & 496 \\
\hline
 & 0
\end{array}
$$

H.C.F. of 496 and 1116 = 124

EXERCISE 8 [D]

1. Find the H.C.F. and L.C.M. of the following numbers.

b. 496 and 1116

L.C.M.

2	496
2	248
2	124
2	62
31	31
	1

2	1116
2	558
3	279
3	93
31	31
	1

Common multiples :

496 = 2 × 2 × 2 × 2 × 31

1116 = 2 × 2 × 3 × 3 × 31

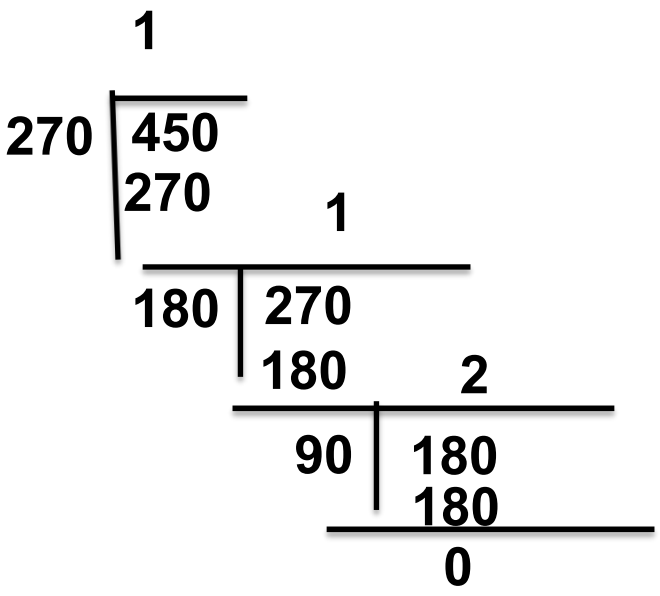
L.C.M. of 496 and 1116 = 2 × 2 × 31 × 2 ×2 × 3 × 3 = 4464

EXERCISE 8 [D]

1. Find the H.C.F. and L.C.M. of the following numbers.

H.C.F.

c. 270 and 450



H.C.F. of 270 and 450 = 90

EXERCISE 8 [D]

1. Find the H.C.F. and L.C.M. of the following numbers.

c. 270 and 450

L.C.M.

2	270
5	135
3	27
3	9
3	3
	1

2	450
5	225
5	45
3	9
3	3
	1

Common multiples :

270 = 2 × 5 × 3 × 3 × 3

450 = 2 × 5 × 5 × 3 × 3

L.C.M. of 270 and 450 = 2 × 5 × 3 × 3 × 3 × 5 = 1350

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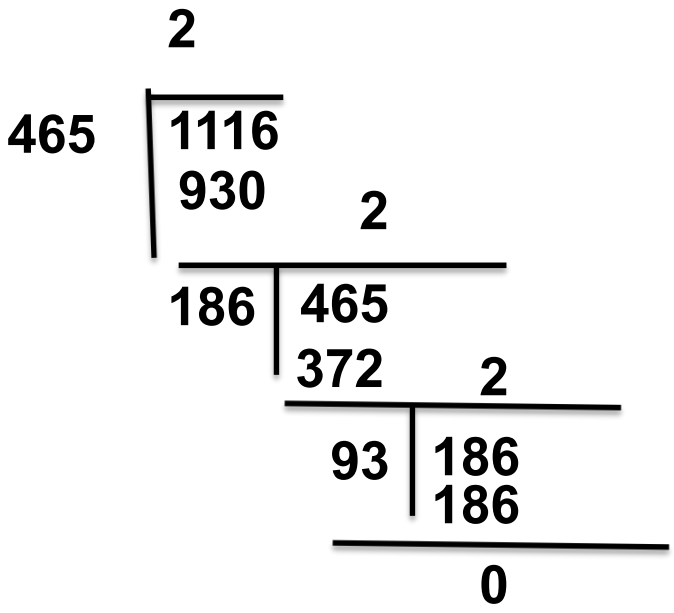
EXERCISE 8 [D]

1. Find the H.C.F. and L.C.M. of the following numbers.

H.C.F.

d. 465 and 1116



H.C.F. of 465 and 1116 = 93

EXERCISE 8 [D]

1. Find the H.C.F. and L.C.M. of the following numbers.

d. 465 and 1116

L.C.M.

5	465
3	93
31	31
	1

2	1116
2	558
3	279
3	93
31	31
	1

Common multiples :

$465 = 5 \times 3 \times 31$

$1116 = 2 \times 2 \times 3 \times 3 \times 31$

L.C.M. of 465 and 1116 = $3 \times 31 \times 2 \times 2 \times 3 \times 5 = 5580$

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EXERCISE 8 [D]

1. Find the H.C.F. and L.C.M. of the following numbers.

H.C.F.

e.408 and 1530

$$
\begin{array}{r|l}
 & 3 \\
\hline
408 & 1530 \\
 & 1224 \\
\hline
 & 1 \\
\hline
306 & 408 \\
 & 306 \\
\hline
 & 3 \\
\hline
102 & 306 \\
 & 306 \\
\hline
 & 0
\end{array}
$$

H.C.F. of 408 and 1530 = 102

EXERCISE 8 [D]

1. Find the H.C.F. and L.C.M. of the following numbers.

e. 408 and 1530

L.C.M.

2	408
2	204
2	102
3	51
17	17
	1

2	1530
5	765
3	153
3	51
17	17
	1

Common multiples :

408= 2 × 2 × 2 × 3 × 17

1530 = 2 ×5 × 3 × 3 × 17

L.C.M. of 408 and 1530 = 2 × 3 × 17 × 2 × 2 × 5 ×3 = 6120

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EXERCISE 8 [D]

1. Find the H.C.F. and L.C.M. of the following numbers.

H.C.F.

f. 603 and 1608

$$
\begin{array}{r|l}
 & 2 \\
\hline
603 & 1608 \\
 & 1206 \\
\hline
 & 1 \\
\hline
402 & 603 \\
 & 402 \\
\hline
 & 2 \\
\hline
201 & 402 \\
 & 402 \\
\hline
 & 0
\end{array}
$$

H.C.F. of 603 and 1608 = 201

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EXERCISE 8 [D]

1. Find the H.C.F. and L.C.M. of the following numbers.

f. 603 and 1608

L.C.M.

3	603
3	201
67	67
	1

2	1608
2	804
2	402
3	201
67	67
	1

Common multiples :

603 = 3 × 3 × 67

1608 = 2 × 2 × 2 × 3 × 67

L.C.M. of 603 and 1608 = 3 × 67 × 2 × 2 × 2 × 3= 4824

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