Ex - 8 (B)

Q 1. 16, 35 (Highest common fac

i)

factors of 16 → 1, 2, 4, 8, 16
factors of 35 → 1, 5, 7, 35
HCF = 1

iii) 27, 75

factor 27 = 1, 3, 9, 27
factor 75 = 1, 3, 5, 15, 25, 75
HCF = 3

Ex - 8 (B) (leftover ques)

1. common factor method.

ii) 25 and 20

25 = 1, 5, 25

20 = 1, 2, 4, 5, 10, 20 HCF = 5

iv) 8, 12 and 18

8 = 1, 2, 4, 8

12 = 1, 2, 3, 4, 6, 12 HCF = 2

18 = 1, 2, 3, 9, 18

v) 24, 36, 45 and 60

24 = 1, 2, 4, 6, 8, 12, 24

36 = 1, 2, 4, 3, 6, 9, 12, 36

45 = 1, 3, 5, 9, 15, 45

60 = 1, 2, 3, 5, 6, 10, 12, 60

HCF = 1

2. Prime factor method

i) 5 and 8

$5 = 5 \times 1$

$8 = 2 \times 2 \times 2 \times 1$ HCF = 1

2.

iii) 24 and 49:

$24 = 2 \times 2 \times 2 \times 3 \times 1$

$49 = 7 \times 7 \times 1$ (HCF = 7)

2	24
2	12
2	6
3	3
	1

7	49
7	7
	1

(W) 06.2021 Wednesday

Ex- 8(B)

2.

iii) 40, 60 and 80

$P_{40} = 2 \times 2 \times 2 \times 5$ $P_{60} = 2 \times 2 \times 3 \times 5$

$P_{80} = 2 \times 2 \times 2 \times 2 \times 5$

Common prime factors between 40, 60 and 80

$= 2 \times 2 \times 5$

Hence, HCF of 40, 60, 80 = 20

iv) 48, 84 and 88

$P_{48} = 2 \times 2 \times 2 \times 2 \times 3$ $P_{84} = 2 \times 2 \times 3 \times 7$

$P_{88} = 2 \times 2 \times 2 \times 11$

Common prime factors between 48, 84, 88

$= 2 \times 2$

$=$ HCF $= 4$

v) 12, 16 and 26

$P_{12} = 2 \times 2 \times 3$

$P_{16} = 2 \times 2 \times 2 \times 2$

$P_{26} = 2 \times 13$

3. i) 16 and 24 :

Using division method, we get

Hence the HCF
of 16 and 24 = 8

16	24	1
	16	
	8	16 | 2
		16
		0

ii) 32, 56 and 46

32, 56 =

$$\begin{array}{r} 32\overline{)56}\,(1 \\ 32 \\ \hline 24\overline{)32}\,(1 \\ 24 \\ \hline 8\overline{)24}\,(3 \\ 24 \\ \hline 0 \end{array}$$

HCF of 32 and 56 = 8

8, 46

$$\begin{array}{r} 8\overline{)46}\,(5 \\ 40 \\ \hline 6\overline{)8}\,(1 \\ 6 \\ \hline 2\overline{)6}\,(3 \\ 6 \\ \hline 0 \end{array}$$

HCF of 8 and 46 = 2

HCF of 32, 56 and 46
= 2

3. Division method

ii) 18 and 30

$$
\begin{array}{r}
18\overline{)30}\,(1 \\
\underline{18} \\
12\overline{)18}\,(1 \\
\underline{12} \\
6\overline{)12}\,(2 \\
\underline{12} \\
0
\end{array}
$$

HCF = 6

iii) 7, 14 and 24.

7, 14

HCF = 7

7) 14 (2
14
0

7, 24

7) 24 (3
21
3) 7 (2
6
1) 3 (1
3
0

HCF of 7, 14, 24
= 1

Q3.

(iv) 70, 80, 120, 150 = HCF = 10

70, 80

$$70\overline{)80}\,(1$$
$$\underline{70}$$
$$10\overline{)70}\,(7$$
$$\underline{70}$$
$$0$$

10, 120

$$10\overline{)120}\,(12$$
$$\underline{120}$$
$$0$$

10, 150

$$10\overline{)150}\,(15$$
$$\underline{150}$$
$$0$$

4.

i) 45, 75, 135 = (common factor method)

- 45 = 1, 3, 5, 9, 15, 45
  75 = 1, 3, 5, 15, 25, 75
  135 = 1, 3, 5, 9, 15, 27, 45, 135
  Common factors = 1, 3, 5, 15
  HCF = 15

ii) 48, 36 and 96 = (division method)

48, 36 =

```
36) 48 (1
   36
   --
   12) 36 (3
       36
       --
        0
```

HCF of 48, 36 = 12

12, 96

```
12) 96 (8
   96
   --
    0
```

HCF of 48, 36, 96 = 12

iii) 66, 33 and 132

66 = 1 * 2 * 3 * 6 * 11, 66
33 = 1, 3 * 11 * 33
132 = 1, 2, 3, 4, 6, 12, ...

Common factor of 66, 33, 132 = 1, 3
HCF = 3

iv) 24, 36, 60 and 132

$24 = 2 \times 2 \times 2 \times 3$
$36 = 2 \times 2 \times 3 \times 3$
$60 = 2 \times 2 \times 3 \times 5$
$132 = 2 \times 2 \times 3 \times 11$

common prime factor
$= 2 \times 2 \times 3$
$=$ HCF $= 12$

v) 30, 60, 90 and 105

$30 = 2 \times 3 \times 5$
$60 = 2 \times 2 \times 3 \times 5$
$90 = 2 \times 3 \times 3 \times 5$
$105 = 3 \times 5 \times 7$

common prime factor
$= 3 \times 5$
$= 15$ (HCF)

5.

The greatest number that divides each of 180, 225 and 315 completely is there HCF.

$180 = 2 \times 2 \times 3 \times 3 \times 5$
$225 = 3 \times 3 \times 5 \times 5$
$315 = 3 \times 3 \times 5 \times 7$
common prime factor $= 3 \times 3 \times 5$
HCF $= 45$

$\therefore$ 45 is the greatest number which can divide the above number completly.

6.

45 and 56 are co-prime nos. because :

$45 = 3 \times 3 \times 5$

$56 = 2 \times 2 \times 2 \times 7$

They don't have any common prime factor.

7.

ans- 15 and 16 = ~~As~~ their common ~~factor~~

$15 = 3 \times 5$

$16 = 2 \times 2 \times 2 \times 2$

→ They don't have common factor

→ Thus they aree co-prime

15 and 28

$15 = 3 \times 5$ $28 = 2 \times 2 \times 7$ → Thus they are copreime

16 and 21.

$16 = 2 \times 2 \times 2 \times 2$

$21 = 3 \times 7$

⇒ Therefore the pairs of copreime aree

1) 15, 16
2) 15, 28
3) 16, 21

8. The greatest number which can devide 93, 111 and 129, leaving remainder 3 in each case is their HCF.

HCF of 93, 111 and 129 is =

93 - 3 = 90
111 - 3 = 108
129 - 3 = 126

∴ The required number of HCF of 90, 108 and 126.

90 = 2 × 3 × 3 × 5
108 = 2 × 2 × 3 × 3 × 3
126 = 2 × 3 × 3 × 7

= 2 × 3 × 3
= 18 (Ans)

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