Qu | 21 | 06 | 23

Ex - 8(B)

2. (iii) 40, 60 and 80

(iv) 48, 84 and 88

(v) 12, 16 and 28

Ans

(iii) 40, 60 and 80

2 | 40	2 | 60	2 | 80
2 | 20	2 | 30	2 | 40
2 | 10	3 | 15	2 | 20
5	5	2 | 10
		5

40 => 2 × 2 × 2 × 5

60 => 2 × 2 × 3 × 5

80 => 2 × 2 × 2 × 2 × 5

Common factor - 2 × 2 × 5

HCF - 20

(iv) 48, 84 and 88

2 | 48	2 | 84	2 | 88
2 | 24	2 | 42	2 | 44
2 | 12	3 | 21	2 | 22
2 | 6	7	11
3		

48 => 2 × 2 × 2 × 2 × 3

84 => 2 × 2 × 3 × 7

88 => 2 × 2 × 2 × 11

Common factors - 2 x 2

HCF - 4

(v) 12, 16, 18

2 | 12	2 | 16	2 | 18
2 | 6	2 | 8	3 | 9
3	2 | 4	3
	2	

12 => 2, 2, 3

16 => 2, 2, 2, 2

18 => 2, 3, 3,

Common factor - 2

HCF - 2

DIVISION METHOD

(i) 16 and 24

Using division method, we get

$$\begin{array}{r} 1 \\ 16 \overline{)\,24\,}^{\,8} \\ -16 \\ \hline 8 \end{array}$$

As its not zero so we have to continue by doing No ÷ 8

$$\begin{array}{r} 2 \\ 8 \overline{)\,16} \\ -16 \\ \hline 0 \end{array}$$

So we got the zero ~~so~~ now as 8 is the HCF, hence

HCF = 24 ÷ 16 = 8

Homework

Ex - 8(B)

All the left parts and Any doubt clear tomorrow.

1. (i) 16 and 35

16 = 1, 2, 4, 8 and 16

35 = 1, 5, 7, 35

Common = 1

HCF = 1

(ii) 25 and 20

25 = 1, 5, 25

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

Common = 1, 5

HCF = 5

(iii) 27 and 75

27 = 1, 3, 9, 27

75 = 1, 3, 5, 15, 25, 75

Common = 1, 3

HCF = 3

(iv) 8, 12 and 18

8 = 1, 2, 4, 8

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

18 = 1, 2, 3, 6, 9, 18

Common = 1, 2

HCF = 2

(v) 24, 36, 45 and 60

24 = 1, 2, 3, 4, 6, 8, 12, 24

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

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

60 = 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60

Common = 1, 3

HCF = 3

2.(i) 5 and 8

5 = 1, 5

8 = 1, 2, 4, 8

Common = 1

HCF = 1

5	5
	1

2	8
2	4
2	2
	1

(ii) 24 and 49

24 = 1, 2, 3, 4, 6, 8, 12, 24

49 = 1, 7, 49

Common = 1

HCF = 1

4(i) 45, 75, 135

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

75 = 1, 3, 5, 15, 25, 75

135 = 1, 3, 5, 9, 15, 27, 45, 135

Common = 1, 3, 5, 15

HCF = 15

(ii) 48, 36, 96

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

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

96 = 1, 2, 3, 4, 6, 8, 12, 16, 24, 32, 48, 96

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

HCF = 12

(iii) 66, 33 and 132

66 = 1, 2, 3, 6, 11, 22, 33, 66

33 = 1, 3, 11, 33

132 = 1, 2, 3, 4, 6, 11, 12, 22, 33, 44, 66, 132

Common = 1, 3, 11, 33

HCF = 33

(iv) 24, 36, 60, 132

24 = 1, 2, 3, 4, 6, 8, 12, 24

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

60 = 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60

132 = 1, 2, 3, 4, 6, 11, 12, 22, 33, 44, 66, 132

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

HCF = 12

(v) 30, 60, 90, 105

30 = 1, 2, 3, 5, 6, 10, 15, 30

60 = 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60

90 = 1, 2, 3, 5, 6, 9, 10, 15, 18, 30, 45, 90

105 = 1, 3, 5, 7, 15, 21, 35, 105

Common = 1, 3, 5, 15

HCF = 15

5. 180 = 1, 2, 3, 4, 5, 6, 9, 10, 12, 15, 18, 20, 30, 36, 45, 60, 90, 180
225 = 1, 3, 5, 9, 15, 25, 45, 75, 225
315 = 1, 3, 5, 7, 9, 15, 21, 35, 45, 63, 105, 315
common = 1, 3, 5, 9, 15, 45
HCF = 45

6. 45 = 1, 3, 5, 9, 15 and 45
56 = 1, 2, 4, 7, 8, 14, 28 and 56
They don't have any common factor except one
Hence there coprime number.

7. 15 = 1, 3, 5, 15
16 = 1, 2, 4, 8, 16
21 = 1, 3, 7, 21
28 = 1, 2, 4, 7, 14, 28
They don't have any common factor except one.
Hence there coprime number.

8. ~~Since, 93 - 3 = 90, 111 - 3 = 108 and 129 - 3 = 126.~~
∴ Required number is H.C.F of 90, 108 and 126
First, decrease the leaving remainder 3 from numbers 93, 111 and 129 to find the required number.
93 - 3 = 90
111 - 3 = 108
129 - 3 = 126
In each case the H.C.F. of 90, 108 and 126 will be the greatest number that will divide 93, 111 and 129 leaving

remainder 3

~~Using division method, the HCF of 90, 105, 126 is given below.~~

3 Using Division Method, find the H.C.F. of the following:

ii) 18 and 30

Using the division method

we get -

$$\begin{array}{r|l} & 1 \\ \hline 18 & 30 \\ & -18 \\ \hline & 12 \end{array}$$

As it is not zero we have to continue again -

$$\begin{array}{r|l} & 1 \\ \hline 12 & 18 \\ & 12 \\ \hline & 6 \end{array}$$

We have to do it again -

$$\begin{array}{r|l} & 2 \\ \hline 6 & 12 \\ & -12 \\ \hline & 0 \end{array}$$

HCF = 6 (as its the last divisore.

(iii) 7, 14 and 24

Using division method we get -

$$7 \overline{)14} \quad 2$$
$$-14$$
$$0$$

As we have another no. left we have to continue

$$7 \overline{)24} \quad 3$$
$$-21$$
$$3 \overline{)7} \quad 2$$
$$-6$$
$$1 \overline{)3} \quad 3$$
$$-3$$
$$0$$

HCF = 1 (as its the last division

(iv) 70, 80, 120 and 150

Using division method we get -

$$70 \overline{)80} \quad 1$$
$$-70$$
$$10$$

As its not zero we have to continue -

$$10 \overline{)70} \quad 7$$
$$-70$$
$$0$$

$$
\begin{array}{r|l}
10 & 120 \\
 & -120 \\
\hline
 & 0
\end{array}
\qquad
\begin{array}{r|l}
10 & 150 \\
 & -150 \\
\hline
 & 0
\end{array}
$$

HCF = 10 (as its the last divisor.

v) 32, 56 and 46

Using division method, we get -

$$
\begin{array}{r|l}
32 & 56 \\
 & -32 \\
\hline
 & 24
\end{array}
$$

As its not zero we have to continue -

$$
\begin{array}{r|l}
24 & 32 \\
 & -24 \\
\hline
 & 8
\end{array}
\qquad
\begin{array}{r|l}
8 & 24 \\
 & -24 \\
\hline
 & 0
\end{array}
$$

$$
\begin{array}{r|l}
8 & 46 \\
 & -40 \\
\hline
 & 6
\end{array}
\qquad
\begin{array}{r|l}
6 & 8 \\
 & -6 \\
\hline
 & 2
\end{array}
\qquad
\begin{array}{r|l}
2 & 6 \\
 & -6 \\
\hline
 & 0
\end{array}
$$

HCF = 2 (as its the last divisores