Ex- 8.2

1. (i) 16 and 35

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

Factors of 35 = 1, 5, 7, 35

HCF = 1

(ii) 25 and 20

Factors of 25 = 1, 5, 5, 25

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

HCF = 5

(iii) 27 and 75

Factors of 27 = 1, 3, 9, 27

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

HCF = 3

(iv) 8, 12 and 18

Factors of 8 = 1, 2, 4, 8

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

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

HCF = 2

(v) 24, 36, 45 and 60

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

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

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

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

HCF = 3

23.6.21

Ex - 8.2

2.(ii) 40, 60, 80

$40 = 2 \times 2 \times 2 \times 5$

$60 = 2 \times 2 \times 3 \times 5$

$80 = 2 \times 2 \times 2 \times 2 \times 5$

HCF $= 2 \times 2 \times 5 = 20$

(iv) 48, 84, 88

$48 = 2 \times 2 \times 2 \times 2 \times 3$

$84 = 2 \times 2 \times 3 \times 7$

$88 = 2 \times 2 \times 2 \times 11$

HCF $= 2 \times 2 = 4$

(i) 5, 8

$5 = 5 \times 1$

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

HCF $= 1$

(ii) 24, 49

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

$49 = 7 \times 7$

HCF $= 1$

(v) 12, 16, 28

$12 = 2 \times 2 \times 3$

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

$28 = 2 \times 2 \times 7$

HCF $= 2 \times 2 = 4$

3.(i) 16 and 24

$$\begin{array}{r} 1 \\ 16 \overline{)24} \\ 16 \\ \hline 8 \end{array} \qquad \begin{array}{r} 2 \\ 8 \overline{)16} \\ 16 \\ \hline 00 \end{array}$$

HCF $= 8$

(ii) 18, 30

$18 = 2 \times 3 \times 3$

$30 = 2 \times 3 \times 5$

HCF

(v) 32, 56, 46

32, 56, 46

HCF of 32 and 56 $= 8$

$$\begin{array}{r} 1 \\ 32 \overline{)56} \\ 32 \\ \hline 24 \end{array} \qquad \begin{array}{r} 1 \\ 24 \overline{)32} \\ 24 \\ \hline 8 \end{array} \qquad \begin{array}{r} 3 \\ 8 \overline{)24} \\ 24 \\ \hline 00 \end{array}$$

$$8 \overline{)46} \quad 5$$

$$6 \overline{)8} \quad 1$$

$$2 \overline{)6} \quad 3$$

$$6 \quad 6$$

$$0$$

HCF of 8 and 46 = 2

HCF of ~~32~~, 56, 46.

3(ii) 18, 30

$$\begin{array}{r} 1 \\ 18\overline{)30} \\ 18 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 1 \\ 12\overline{)18} \\ 12 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 2 \\ 6\overline{)12} \\ 12 \\ \hline 0 \end{array}$$

So, HCF of 18, 30 = 6.

(iii) 7, 14, 24

$$7\overline{)14}\ (2,\ 14,\ 0$$

$$7\overline{)24}\ (3,\ 21,\ 2$$

$$3\overline{)7}\ (2,\ 6,\ 1$$

$$1\overline{)3}\ (3,\ 3,\ 0$$

~~HCF of 7, 14 = 1~~

$$1\overline{)24}\ (24,\ 2,\ 04,\ 4,\ 00$$

~~HCF of 1, 24 = 1~~

So, HCF of 7, 14, 24 = 1

(iv) 70, 80, 120, 150

$$70\overline{)80}\ (1,\ 70,\ 10)\overline{70}\ (7,\ 70,\ 00)$$

$$10\overline{)120}\ (12,\ 10,\ 20,\ 20,\ 00)$$

$$10\overline{)150}\ (15,\ 10,\ 50,\ 50,\ 00)$$

So, HCF of 70, 80, 120, 150 = 10

4.(i) 45, 75, 135

$$45\overline{)75}\ (1$$

$$30\overline{)45}\ (1$$

$$15\overline{)30}\ (2$$

$$30$$

$$00$$

HCF of 45 and 75 = 15

$$15\overline{)135}\ (9$$

$$135$$

$$000$$

HCF of 15 and 135 = 15

HCF of 45, 75, 135 = 15

(ii) 48, 36, 96

$$36\overline{)48}\ (1$$

$$12\overline{)36}\ (3$$

$$36$$

$$00$$

HCF of 36 and 48 = 12

$12\overline{)96}\ 8$, $\frac{96}{00}$ HCF of 12 and 96 = 8

HCF of 48, 36 and 96 = 8

(iii) 66, 33, 132

$33\overline{)66}\ 2$, $\frac{66}{0}$ HCF of 66 and 33 = 33

$33\overline{)132}\ 4$, $\frac{132}{000}$ HCF of 33 and 132 = 33

So, HCF of 66, 33 and 132 = 33.

(iv) 24, 36, 60 and 132

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

$36 = 2 \times 2 \times 3 \times 3$

$60 = 2 \times 2 \times 3 \times 5$

$132 = 2 \times 2 \times 3 \times 11$

HCF = $2 \times 2 \times 3 = 12$

2 | 60	2 | 24	2 | 36
2 | 30	2 | 12	2 | 18
3 | 15	2 | 6	3 | 9
5	3	3

2 | 132
2 | 66
3 | 33
11

(v) 30, 60, 90 and 105

$30 = 2 \times 3 \times 5$

$60 = 2 \times 2 \times 3 \times 5$

$90 = 2 \times 3 \times 3 \times 5$

$105 = 3 \times 5 \times 7$

HCF = $3 \times 5 = 15$

2 | 60	2 | 30
2 | 30	3 | 15
3 | 15	5
5	

2 | 90	3 | 105
3 | 45	5 | 35
3 | 15	7
5	

5. The greatest number which divides 180, 225 and 315 ~~completely~~ completely is the HCF of 180, 225 and 315.

$$180 \overline{)225}\ (1 \qquad 45 \overline{)180}\ (4 \qquad 45 \overline{)315}\ (7$$

$$\begin{array}{r} 180 \\ \hline 45 \end{array} \qquad \begin{array}{r} 180 \\ \hline 0 \end{array} \qquad \begin{array}{r} 315 \\ \hline 0 \end{array}$$

So, HCF of 180, 225 and 315 = 45.
So, the no. is 45.

6. $45 = 3 \times 3 \times 5$
$56 = 2 \times 2 \times 2 \times 7$
HCF = 1
Hence, 45 and 56 are co-prime.

7. 15 and 16
15 and 28
16 and 21

8. $93 - 3 = 90$
$111 - 3 = 108$
$129 - 3 = 126$
HCF of 90, 108 and 126 = 18

$$\begin{array}{r} 1 \\ 90\overline{)108} \\ 90 \\ \hline 18\overline{)90} \\ 90 \\ \hline 00 \end{array} \qquad \begin{array}{r} 7 \\ 18\overline{)126} \\ 126 \\ \hline 0 \end{array}$$

So, the greatest no. that will divide 93, 111 and 129, leaving remainder 3 in each case is 18.