

EX: 27, 75

Factors of 27 = ~~1, 3, 9, 27~~ → 1, 3, 9, 27

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

HCF = 3

EX: 8, 12, 18

Factors of 8 = 1, 2, 4, 8

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

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

HCF = 2

H.W

EXERCISE 8(B)

1. (i) 16 and 35

16 = 1, 2, 4, 8, 16

35 = 1, 5, 7, 35

HCF = 1

(ii) 25 and 20

25 = 1, 5, 25

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

CF = 1, 5

HCF = 5

(iii) 27 and 75

$$27 = 1, 3, 9, 27$$

$$75 = 1, 3, 5, 25, 75$$

$$CF = 1, 3$$

$$HCF = 3$$

(iv) 8, 12 and 18

$$8 = 1, 2, 4, 8$$

$$12 = 1, 2, 3, 6, 12$$

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

$$CF = 1, 2$$

$$HCF = 2$$

(v) 24, 36, 45 and 60

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

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

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

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

$$CF = 1, 3$$

$$HCF = 3$$

2. (i) 5 and 8

$$\begin{array}{r} 2 \overline{) 8} \\ \underline{2} \\ 4 \\ \underline{2} \\ 2 \end{array}$$

$$5 = 1 \times 5$$

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

$$HCF = 1$$

(i) 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		

$48 = 2 \times 2 \times 2 \times 2 \times 3$
 $84 = 2 \times 2 \times 3 \times 7$
 $88 = 2 \times 2 \times 2 \times 11$

HCF = $2 \times 2 = 4$

(ii) 24 and 49

2 24	7 49	$24 = 2 \times 2 \times 2 \times 3$
2 12	7	$49 = 7 \times 7$
2 6		HCF = 1
3		

(iii) 40, 60, 80

2 40	2 60	2 80	$40 = 2 \times 2 \times 5 \times 2$
2 20	2 30	2 40	$60 = 2 \times 2 \times 5 \times 3$
2 10	3 15	2 20	$80 = 2 \times 2 \times 5 \times 2 \times 2$
5	5	2 10	HCF = $2 \times 2 \times 5 = 20$
		5	

(iv) 12, 16 and 28

$2 \overline{) 12}$	$2 \overline{) 16}$	$2 \overline{) 28}$	$12 = 2 \times 2 \times 3$
$2 \overline{) 6}$	$2 \overline{) 8}$	$2 \overline{) 14}$	$16 = 2 \times 2 \times 2 \times 2$
3	$2 \overline{) 4}$	7	$28 = 2 \times 2 \times 7$
	2		$HCF = 2 \times 2 = 4$

3. (i) 16 and 24

$16 \overline{) 24} \quad 1$	
16	$HCF = 8$
$8 \overline{) 16} \quad 2$	
16	
0	

(ii) 18 and 30

$18 \overline{) 30} \quad 1$	
18	$HCF = 6$
$12 \overline{) 18} \quad 1$	
12	
$6 \overline{) 12} \quad 2$	
12	
0	

(iii) 7, 14 and 24

$7 \overline{) 14} \quad 2$	$7 \overline{) 24} \quad 3$	$HCF = 1$
14	21	
0	$3 \overline{) 7} \quad 2$	
	6	
	$1 \overline{) 3} \quad 3$	
	3	
	0	

(iv) 70, 80, 120 and 150

80	120	1	40	150	30
<u>80</u>			<u>40</u>		
40	80	2	30	40	1
<u>40</u>			<u>30</u>		
	0			30	
			<u>10</u>		30
					30
					0

10	70	7	HCF = 10
<u>70</u>			
	0		

(v) 32, 56, 46

32	46	1	2	56	28
<u>32</u>			<u>56</u>		
14	32	2	56		
<u>14</u>			<u>56</u>		
	0		0		
			<u>4</u>		14
					12
			<u>2</u>		4
					4
					0
					0

HCF = 2

4. (i) 45, 75, 135

$$\begin{array}{r} 3 \overline{)45} \\ 3 \overline{)15} \\ 5 \end{array}$$

$$\begin{array}{r} 3 \overline{)75} \\ 5 \overline{)25} \\ 5 \end{array}$$

$$\begin{array}{r} 3 \overline{)135} \\ 3 \overline{)45} \\ 3 \overline{)15} \\ 5 \end{array}$$

$$45 = 3 \times 5 \times 3$$

$$75 = 3 \times 5 \times 5$$

$$135 = 3 \times 5 \times 3 \times 3$$

$$\text{HCF} = 3 \times 5 = 15$$

(ii) 48, 36, 96

$$\begin{array}{r} 2 \overline{)48} \\ 2 \overline{)24} \\ 2 \overline{)12} \\ 2 \overline{)6} \\ 3 \end{array}$$

$$\begin{array}{r} 2 \overline{)36} \\ 2 \overline{)18} \\ 3 \overline{)9} \\ 3 \end{array}$$

$$\begin{array}{r} 2 \overline{)96} \\ 2 \overline{)48} \\ 2 \overline{)24} \\ 2 \overline{)12} \\ 2 \overline{)6} \\ 3 \end{array}$$

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

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

$$96 = 2 \times 2 \times 3 \times 2 \times 2 \times 2$$

$$\text{HCF} = 2 \times 2 \times 3 = 12$$

(iii) 66, 33, 132

$$\begin{array}{r} 2 \overline{)66} \\ 3 \overline{)33} \\ 11 \end{array}$$

$$\begin{array}{r} 3 \overline{)33} \\ 11 \end{array}$$

$$\begin{array}{r} 2 \overline{)132} \\ 2 \overline{)66} \\ 3 \overline{)33} \\ 11 \end{array}$$

$$66 = 3 \times 11 \times 2$$

$$33 = 3 \times 11$$

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

$$\text{HCF} = 3 \times 11 = 33$$

(iv) 24, 36, 60, 132

$$\begin{array}{r} 2 \overline{)24} \\ 2 \overline{)12} \\ 2 \overline{)6} \\ 3 \end{array}$$

$$\begin{array}{r} 2 \overline{)36} \\ 2 \overline{)18} \\ 3 \overline{)9} \\ 3 \end{array}$$

$$\begin{array}{r} 2 \overline{)60} \\ 2 \overline{)30} \\ 3 \overline{)15} \\ 5 \end{array}$$

$$\begin{array}{r} 2 \overline{)132} \\ 2 \overline{)66} \\ 3 \overline{)33} \\ 11 \end{array}$$

$$56 = 2 \times 2 \times 3 \times 3$$

$$24 = 2 \times 2 \times 3 \times 2 \quad \text{HCF} = 2 \times 2 \times 3 = 12$$

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

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

(v) 30, 60, 90, 105

$2 \mid 30$	$2 \mid 60$	$2 \mid 90$	$3 \mid 105$
$3 \mid 15$	$2 \mid 30$	$3 \mid 45$	$5 \mid 35$
$5 \mid 5$	$3 \mid 15$	$3 \mid 15$	$7 \mid 7$
	$5 \mid 5$	$5 \mid 5$	

~~$30 = 3 \times 5 \times 7$~~

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

HCF = $3 \times 5 = 15$

5. 180, 225, 315

$2 \mid 180$	$3 \mid 225$	$3 \mid 315$	$180 = 3 \times 3 \times 5 \times 2 \times 2$
$2 \mid 90$	$3 \mid 75$	$3 \mid 105$	$225 = 3 \times 3 \times 5 \times 5$
$3 \mid 45$	$5 \mid 25$	$5 \mid 35$	$315 = 3 \times 3 \times 5 \times 7$
$3 \mid 15$	$5 \mid 5$	$7 \mid 7$	HCF = $3 \times 3 \times 5 = 45$
$5 \mid 5$			

6. 45, 56

$3 \mid 45$	$2 \mid 56$	$45 = 3 \times 3$
$3 \mid 15$	$2 \mid 28$	$56 = 2 \times 2 \times 2 \times 7$
$5 \mid 5$	$2 \mid 14$	
	$7 \mid 7$	

As there is no common factor the nos. 45, 56 are coprime.

EXERCISE 8(C)

7. 15816, 15828, 16821 are prices of copra

8. $93 - 3 = 90$, $111 - 3 = 108$, $129 - 3 = 126$

HCF =

$\begin{array}{r l} 2 & 90 \\ \hline & 45 \\ 3 & 15 \\ \hline & 5 \end{array}$	$\begin{array}{r l} 2 & 108 \\ \hline & 54 \\ 3 & 27 \\ \hline & 9 \\ & 3 \end{array}$	$\begin{array}{r l} 2 & 126 \\ \hline & 63 \\ 3 & 21 \\ \hline & 7 \end{array}$
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$90 = 2 \times 3 \times 3 \times 5$
 $108 = 2 \times 2 \times 3 \times 3 \times 3$
 $126 = 2 \times 3 \times 3 \times 7$

HCF = $2 \times 3 \times 3 = 18$