C.W
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Ex - B(B)

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1) Using the common factor Method, find the H.C.F of

i) 16 and 35

Ans) factors of 16 = 1, 2, 4, 8,
factors of 35 = 1, 5, 7,
HCF of 16 and 35 = 1

ii) 25 and 20

Ans) factors of 25 = 1, 5,
factors of 20 = 1, 2, 4, 5, 10
HCF of 25 and 20 = 5

iii) 27 and 75

Ans) factors of 27 = 3, 9, 1
factors of 75 = 1, 25, 3, 5, 15,
So HCF of 27 and 75 is = 3

iv) 8, 12 and 18

Ans) factors of 8 = 2, 4, 1
factors of 18 = 2, 3, 6, 9, 1
factors of 12 = 2, 3, 4, 6, 1
So, HCF of 8, 12 and 18 = 2

v) 24, 36, 45 and 60

Ans) factors of 24 = 2, 3, 4, 6, 8, 1.
factors of 36 = 2, 3, 4, 6, 9, 18, 12, 1.
factors of 45 = 1, 5, 9, 3, 15
factors of 60 = 1, 2, 3, 5, 6, 10, 20, 30, 12.
So HCF of 24, 36, 45 and 60 is 3

2) Using prime factor method, find the HCF of:

i) 5 and 8

Ans) $5 = 1 \times 5$

$8 = 2 \times 2 \times 2$

HCF of 8 and 5 = ~~No common no~~. 1

ii) 24, 49

Ans) $24 = 2 \times 2 \times 2 \times 3$

~~$49 = 2 \times 2 \times 2 \times 3 \times$~~

$49 = 7 \times 7$

HCF of 24 and 49 is 1

iii) 40, 60, 80

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

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

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

So, HCF of 40, 60, 80 is $2 \times 2 \times 5 = 20$

iv) 48, 84 and 88

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

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

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

HCF of $= 2 \times 2 = 4$

v) 12, 16, 28

Ans) 12 = 2 × 2 × 3
16 = 2 × 2 × 2 × 2
28 = 2 × 2 × 7

So HCF = 2 × 2 = 4

3) i) 16 and 24

Ans)
```
16 ) 24 ( 1
     16
     --
     08 ) 16 ( 2
          16
          --
           0
```
So HCF is 8

ii) 18 and 30

Ans)
```
18 ) 30 ( 1
     18
     --
     12 ) 18 ( 1
          12
          --
          06 ) 12 ( 2
               12
               --
                0
```
So HCF is 6

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iii) 7, 14 and 24

Ans) 7) 14 (2
14
0

7) 24 (3
21
03) 7 (2
6
1) 3 (3
3
0

HCF is = 1

iv) 70, 80, 120 and 150

Ans) 70) 80 (1
70
10) 70 (7
70
00

120) 150 (1
120
030) 120 (4
120
000

70) 120 (1
70
50) 70 (1
50
20) 50 (2
40
10) 20 (2
20
00

70) 150 (2
140
010) 70 (7
70
00

So, H.C.F of 70, 80, 120 and 150 is 10

4) Use a method of your own choice to find H.C.F of:

i) 45, 75 and 135

Ans)

45) 75 (1
45
30) 45 (1
30
15) 30 (2
30
00

45) 135 (3
135
000

15) 135 (09
135
0

HCF of 45, 75, 135 is 15

ii) 48, 36, 96

Ans)

36) 48 (1
36
12) 36 (3
36
00

36) 96 (2
72
24) 36 (1
24
12) 24 (2
24
00

So HCF of 48, 36, 96 is 12

iii) 66, 33 and 132

Ans)
$$33\overline{)66}\,(2 \quad 66 \quad 00$$
$$33\overline{)132}\,(4 \quad 132 \quad 000$$

So HCF is 33.

iv) 24, 36, 60 and 132

Ans)
$$24\overline{)36}\,(1 \quad 24 \quad 12\overline{)24}\,(2 \quad 24 \quad 00$$
$$24\overline{)60}\,(2 \quad 48 \quad 12\overline{)24}\,(2 \quad 24 \quad 00$$
$$24\overline{)132}\,(5 \quad 120 \quad 012\overline{)24}\,(2 \quad 24 \quad 00$$

So HCF of 24, 36, 60, 132 is 24

v) 30, 60, 90 and 105

Ans)
$$30\overline{)60}\,(2 \quad 60 \quad 00$$
$$30\overline{)90}\,(3 \quad 90 \quad 00$$
$$30\overline{)105}\,(3 \quad 90 \quad 15\overline{)30}\,(2 \quad 30 \quad 00$$

So HCF is 15

5) Find the greatest no. that divides each of ~~180,225~~ 180, 225 and 315 completely.

180 = 2, ~~3~~, 6, ~~9~~, 10, ~~18~~,
225 =
315 =

180) 225 (1
180
45) 180 (4
180
0

45) 315 (7
315
0

45 is the greatest no. that divides each of 180, 225, 315 completely

6) Show that 45 and 56 are co-prime numbers

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45 = 3 × 3 × 5

56 = 2 × 2 × 2 × 2 × 2 × 2.

∴ This shows 45 and 56 are co-prime nos.

7) Out of 15, 16, 21

15, 16 — HCF of 15, 16 is = 1
16, 21 — HCF of 16, 28 is = 1
15, 21 — HCF of 15, 21 is = 1
15, 28 — HCF is of 15, 28 is = 1

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8. Find the greatest no. that will divide 93, 111 and 129, leaving 3 in each case

Ans) 93 − 3 = 90
111 − 3 = 108
129 − 3 = 126

$$90 \overline{)108}(1$$
$$-90$$
$$18 \overline{)90}(5$$
$$90$$
$$0$$

$$18 \overline{)126}(7$$
$$-126$$
$$0$$

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