HW 25.6.21

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Date
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Exercise - 8(B)

1.(i) 16 and 35 - $F_{16} = 1, 2, 4, 8, 16.$
$F_{35} = 1, 5, 7, 35.$

Common factores between 16 and 35 = 1.
HCF of 16 and 35 = 1.

(ii) 25 and 20 - $F_{25} = 1, 5, 25$
$F_{20} = 1, 2, 4, 5, 10, 20.$
Common factors between 25 and 20 = 1, 5.
HCF of 25 and 20 = 5.

(iii) 27 and 75 - $F_{27} = 1, 3, 9, 27$
$F_{75} = 1, 3, 5, 15, 25, 75$
Common factors between 27 and 75 = 1, 3
HCF of 27 and 75 = 3.

(iv) 24, 36, 45 and 60 - $F_{24} = 1, 2, 3, 4, 6, 8, 12$
24.
$F_{36} = 1, 2, 3, 4, 6, 12, 18, 36.$
$F_{45} = 1, 3, 5, 9, 15, 45.$
$F_{60} = 1, 3, 5, 4, 6, 10, 12,$
$15, 20, 30, 60.$
common factors between 24, 36, 45 and

60 = 1, 3.
∴ The HCF of 24, 36, 45 and 60.

(v) 8, 12 and 18 = F_8 = 1, 2, 4 and 8.
F_{12} = 1, 2, 3, 4, 6 and 12.
F_{18} = 1, 2, 3, 6, 9 and 18.
Common factor between 8, 12 and 18 = 1, 2.
∴ The HCF of 8, 12 and = 2.

2.(i) 5 and 8 = Prime factor of 5 = 1 x 5
Prime factor of 8 = 1 x 8
HCF of 5 and 8 = 1.

(ii) 24 and 49 = Prime factors of 24 = 2 x 12
Prime Pators of 49 = 7 x 7.
HCF of 24 and 49 = 1.

(iii) 40, 60 and 80 = Prime factors of 40 = 2 x 20
Prime factors of 60 = 3 x 20
Prime factors of 80 = 4 x 20
HCF of 40, 60 and 80 = 20.

Prime factor of 48 = 2 × 14.
" " " 84 = 2 × 42
" " " 88 = 2 × 44

HCF of 48, 84 and 88 = 2 × 2 = 4.

(v) 12, 16, and 8 - P.F of 12 = 2 × 6.
P.F. of 16 = 2 × 8.
P.F. of 8 = 2 × 4.
HCF of 12, 16 and 8 = 2 × 2 = 4.

3. (i) 16 and 24 -

24	1
-16	
8	2
16	
-16	
x	

HCF of 16 and 24 = 8.

(ii) 18 and 30 -

30	1
-18	
12	1
18	
-12	
6	2
12	
-12	
0	

HCF of 18 and 30 = 6.

(iii) 7, 14 and 24 =

7	14	2
	-14	
	0	

7	24	3
	-21	
	3	

3	7	2
	-6	
	1	

1	3	3
	-3	
	0	

HCF of 7, 14 and 24 - 1

(iv) 70, 80, 120 and 150 -

70	80	1
	-70	
	10	

10	70	7
	-70	
	X	

HCF of 70, 80, 120 and 150 = 10.

10	150	15
	150	
	X	

10	120	12
	120	
	X	

(v) 32, 56, and 46 -

32	56	1
	-32	
	24	

24	32	1
	-24	
	8	

8	24	3
	24	
	X	

8	46	5
	-40	
	6	

6	8	1
	-6	
	2	

2	6	3
	-6	
	0	

HCF of 32, 56 and 46 = 2.

4(i) P. Factor of 45 = 3 × 15
P. Fator of 75 = 3 × 25
P. Fator of 135 = 3 × 43

HCF of 45, 75, 135 = 15.

(ii) =

36	48	1
	-36	
	12	

12	36	3
	-36	
	0	

12	96	8
	-96	
	0	

HCF of 36, 48 and 96
= 12.

(iii)

33	66	2
	-66	
	0	

33	132	4
	132	
	0	

HCF of 33, 66 and 136 = 33

(iv) 24 | 36 | 1
-24
13 | 60 (10) | 4
-52
8 | 132 (12) | 16
-128
4 | 8 | 2
-8
0

HCF of 24, 36, 60 and 132 = 12.

(v) 30 | 60 | 2
-60
×

30 | 90 | 3
-90
×

30 | 105 | 3
-90
15 | 30 | 2
-30
×

HCF of 30, 60, 90 and 105 = 15.

5. ans- The greatest no. that divides each of 180, 225 and 315 will be HCF of 180, 225 and 315.

$$\begin{array}{r|l|l} 180 & 225 & 1 \\ & -180 & \\ \hline 45 & 180 & 4 \\ & -180 & \\ \hline & \times & \end{array}$$

Since 3rd number is 315 and HCF obtained above is 45, we will find HCF of 315 and 45.

$$\begin{array}{r|l|l} 45 & 315 & 7 \\ & -315 & \\ \hline & \times & \end{array}$$

Hence of 180, 225 and 315 is 45.

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

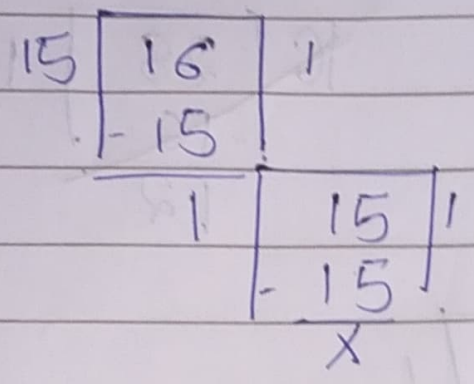
6) The HCF of two coprime numbers is always 1.

$$\begin{array}{r|l|l} 45 & 56 & 1 \\ & 45 & \\ \hline 11 & 45 & 4 \\ & -44 & \\ \hline 1 & 11 & 11 \\ & -11 & \\ \hline & \times & \end{array}$$

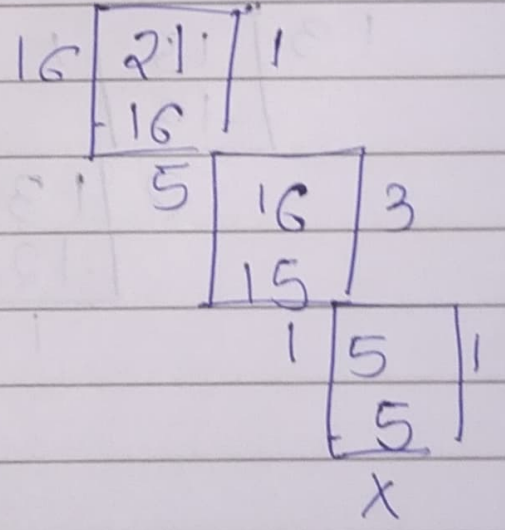
HCF of 45 and 56 = 1.

Hence, 45 and 56 are coprime nos.

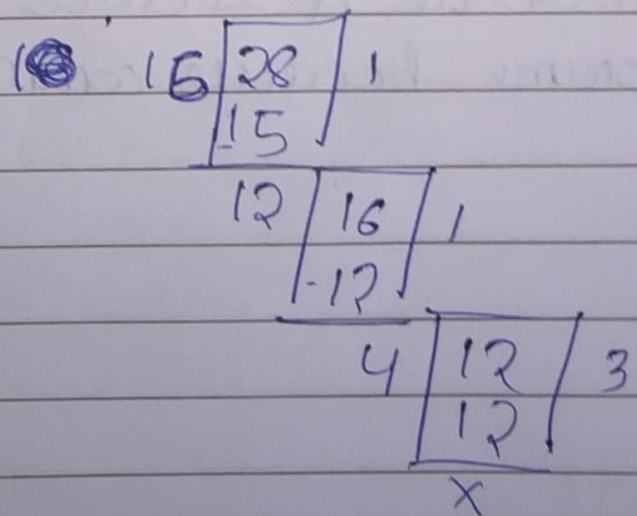
HCF of 15 and 16.



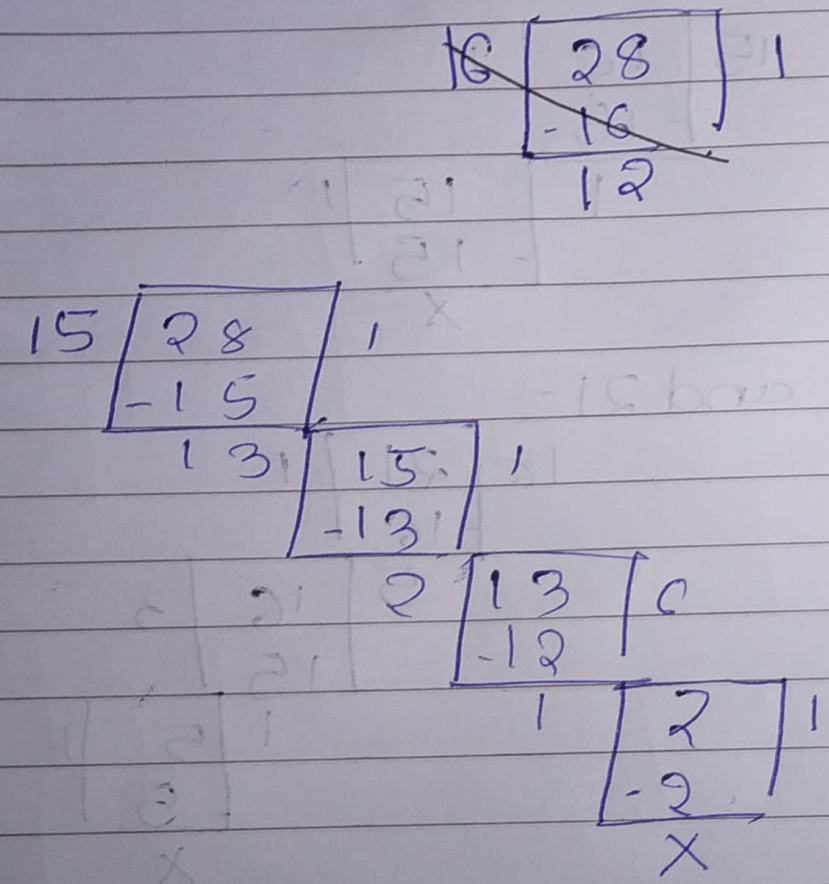
HCF of 16 and 21-



HCF of 16 and 28-



HCF of 16 and 28-



From above it is clear that 15 and 16 are co-prime because common factor 1.