

8 B

1. (i) 16 and 35

$$16 = 1, 2, 4, 8, 16$$
$$35 = 1, 5, 7, 35$$

$$\text{hcf} = 1$$

(ii) 25 and 20

$$25 = 5 \times 5 = 1 \times 25$$
$$20 = 4 \times 5 = 1 \times 4 \times 20$$

$$\text{hcf} = 5$$

(iii) 27 and 75

$$27 = 1 \times 3 \times 9 = 27$$
$$75 = 1 \times 3 \times 5 \times 25 = 15$$
$$\text{hcf} = 3$$

(iv) ~~24~~ 8, 12, 18

$$8 = 1 \times 2 \times 4 = 8$$
$$12 = 1 \times 2 \times 3 \times 4 = 12$$
$$18 = 1 \times 2 \times 3 \times 9 = 18$$

$$\text{hcf} = 2$$

(v) 24, 36, 45, 60

$$24 = 1 \times 2 \times 3 \times 4 \times 6 \times 8 \times 12 \times 24$$
$$36 = 1 \times 2 \times 3 \times 4 \times 6 \times 9 \times 12 \times 18 \times 36$$

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

$$\text{Hcf} = 5$$

Q. (i) 5 and 8

$$5 = 1 \times 5$$

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

$$\text{hcf} = 1$$

(ii) 24 and 49

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

$$49 = 7 \times 7$$

$$\text{Hcf} = 1$$

(iii) 40, 60 and 80

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

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

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

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

2	60
2	30
3	15
	5

(iv) 48, 44, 48, 88

	48		48		88		80
2	24	2	22	2	44	2	40
2	12		11	2	22	2	20
2	6				11		10
	3						5

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

$$44 = 2 \times 2 \times 11$$

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

$$\text{Hcf} = 2 \times 2 = 4$$

(v) 12, 16 and 28

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

$$\begin{array}{r} 2 \overline{) 16} \\ \underline{2 } \\ 2 \overline{) 8} \\ \underline{2 } \\ 2 \overline{) 4} \\ \underline{2 } \\ 2 \end{array}$$

$$\begin{array}{r} 2 \overline{) 28} \\ \underline{2 } \\ 2 \overline{) 14} \\ \underline{2 } \\ 7 \end{array}$$

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

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

$$28 = 2 \times 2 \times 7$$

$$\text{Hcm} = 2 \times 2 = 4$$

3 (i) 16 and 24

$$\begin{array}{r} 16 \overline{) 24} \\ \underline{16} \\ 8 \overline{) 16} \\ \underline{16} \\ 0 \end{array}$$

$$\text{hcf} = 8$$

(ii) 18 and 30

$$\begin{array}{r} 18 \overline{) 30} \\ \underline{18} \\ 12 \overline{) 18} \\ \underline{12} \\ 6 \overline{) 12} \\ \underline{6 } \\ 6 \end{array}$$

$$\text{hcf} = 6$$

(iii) 7, 14 and 24

$$\begin{array}{r} 3 \\ 7 \overline{) 24} \\ \underline{21} \end{array}$$

$$\begin{array}{r} 1 \\ 4 \overline{) 24} \\ \underline{14} \\ 10 \\ \underline{10} \\ 0 \end{array}$$

$$\begin{array}{r} 2 \\ 4 \overline{) 10} \\ \underline{8} \\ 2 \end{array}$$

$$\begin{array}{r} 2 \\ 2 \overline{) 4} \\ \underline{4} \\ 0 \end{array}$$

(iv) 70, 80, 120, 150

$$\begin{array}{r} 1 \\ 80 \overline{) 150} \\ \underline{80} \\ 70 \end{array}$$

$$\begin{array}{r} 1 \\ 70 \overline{) 80} \\ \underline{70} \\ 10 \end{array}$$

$$\begin{array}{r} 7 \\ 10 \overline{) 70} \\ \underline{70} \\ 0 \end{array}$$

$$\begin{array}{r} 12 \\ 10 \overline{) 120} \\ \underline{100} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

$$\begin{array}{r} 7 \\ 10 \overline{) 70} \\ \underline{70} \\ 0 \end{array}$$

(v) 32, 56, 46

$$\begin{array}{r}
 1 \\
 32 \overline{) 56} \\
 \underline{32} \quad 1 \\
 24 \overline{) 32} \\
 \underline{24} \quad 3 \\
 8 \overline{) 24} \\
 \underline{24} \\
 0
 \end{array}$$

4. Use a method of your own choice to find the hcf.

(i) 45, 75 and 135

$$\begin{array}{r}
 1 \\
 75 \overline{) 135} \\
 \underline{75} \\
 60 \overline{) 75} \\
 \underline{60} \quad 4 \\
 15 \overline{) 60} \\
 \underline{60} \\
 0
 \end{array}$$

Hcf = 15

(ii) 48, 36 and 96

$$\begin{array}{r}
 48 \overline{) 96} \\
 \underline{48} \\
 36 \overline{) 96} \\
 \underline{72} \quad 1 \\
 24 \overline{) 36} \\
 \underline{24} \quad 2 \\
 12 \overline{) 24} \\
 \underline{24} \\
 0
 \end{array}$$

(iii) 66, 33 and 132

$$\begin{array}{r}
 2 \\
 \cancel{66} \cancel{132} \\
 \underline{\quad} \\
 \underline{\quad} \\
 0
 \end{array}
 \qquad
 \begin{array}{r}
 2 \cancel{66} \\
 \underline{\quad} \\
 3 \cancel{33} \\
 \underline{\quad} \\
 11
 \end{array}
 \qquad
 \begin{array}{r}
 \cancel{33} \\
 \underline{\quad} \\
 11
 \end{array}$$

$$\begin{array}{r}
 2 \cancel{66} \\
 \underline{\quad} \\
 3 \cancel{33} \\
 \underline{\quad} \\
 11
 \end{array}$$

$$\begin{array}{r}
 2 \cancel{132} \\
 \underline{\quad} \\
 2 \cancel{66} \\
 \underline{\quad} \\
 3 \cancel{33} \\
 \underline{\quad} \\
 11
 \end{array}$$

ice to find

$$\begin{aligned}
 66 &= 2 \times 3 \times 11 \\
 132 &= 2 \times 2 \times 3 \times 11 \\
 33 &= 3 \times 11
 \end{aligned}$$

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

(iv) 24, 36, 60 and 132

$$\begin{array}{r}
 2 \\
 60 \cancel{132} \\
 \underline{120} \quad 5 \\
 1 \quad 2 \cancel{60} \\
 \underline{\quad} \\
 \quad \quad \underline{60} \\
 \quad \quad \quad 0
 \end{array}$$

$$\text{Hcf} = 12$$

(v) 30, 60, 90 and 105

$$\text{Hcf} = 15$$

$$\begin{array}{r}
 1 \\
 60 \cancel{105} \\
 \underline{60} \quad 1 \\
 4 \quad 5 \cancel{60} \\
 \underline{\quad} \\
 \quad \quad \underline{45} \quad 3 \\
 \quad \quad \quad 1 \quad 5 \cancel{45} \\
 \quad \quad \quad \quad \quad 0
 \end{array}$$

$$\begin{array}{r} 1 \\ 180 \overline{) 315} \\ \underline{180} \\ 135 \overline{) 180} \\ \underline{135} \\ 45 \overline{) 135} \\ \underline{135} \\ 0 \end{array}$$

Ans = 45

6. Show that 45 and 56 are coprime numbers.

$45 = 5 \times 3 \times 3$
 $56 = 2 \times 2 \times 2 \times 7$
45 and 56 doesn't have any common factor. Numbers that doesn't have any common factors are called co-prime numbers.

7. Out of 15, 16 and 21 and 28 find out all the pairs of co-prime numbers.

Ans - 16, 15 21, 28
16, 21 15, 28

8. Find the greatest number that will divide 93, 111 and 129, leaving remainder 3 in each case.

$$\begin{aligned} 93 - 3 &= 90 \\ 111 - 3 &= 108 \\ 129 - 3 &= 126 \end{aligned}$$

$$90 \overline{) 126}$$

$$\begin{array}{r} 90 \\ \underline{36} \\ 90 \\ \underline{36} \\ 0 \end{array}$$

Ans = 18

$$\begin{array}{r} 18 \\ \underline{18} \\ 0 \end{array}$$

CW - 24/6/2021

Product of two numbers = Hcf x lcm

$$A \times B = \text{Hcf} \times \text{lcm}$$

$$\textcircled{1} A = \frac{\text{Hcf} \times \text{lcm}}{B}$$

$$\textcircled{2} B = \frac{\text{Hcf} \times \text{lcm}}{A}$$

$$\text{Hcf} = \frac{A \times B}{\text{lcm}}$$

$$\text{lcm} = \frac{A \times B}{\text{Hcf}}$$

(i) Ex = 10 and 15

$$\text{Hcf} = \frac{5 | 10, 15}{2, 3}$$

$$\text{Hcf} = 5$$

$$\text{Lcm} = 30$$

(ii) A = ~~10~~? B = 15

$$\text{Hcf} = 5 \quad \text{lcm} = 30$$

$$A = \frac{\text{Hcf} \times \text{lcm}}{B}$$

$$A = \frac{5 \times 30}{15} = A = 10$$

$$A = 10, B = ?$$

$$\text{Hcf} = 5 \quad \text{lcm} = 30$$

$$B = \frac{\text{Hcf} \times \text{lcm}}{A}$$

$$B = \frac{5 \times 30}{10} = 15$$

$$B = 15$$

$$A = 10 \quad B = 15$$

$$\text{Hcf} = ? \quad \text{lcm} = 30$$

$$Hcf = \frac{A \times B}{lcm} = A = \frac{10 \times 15}{30} = 5$$

(iv) $A=10$, $B=15$, $Hcf=5$ $lcm=?$

$$Lcm = \frac{A \times B}{Hcf} = \frac{10 \times 15}{5} = 30$$