Page No.

Date : / /

check point - 5 - C

1 list the common factors of each of the following set of numbers and hence find their HCF

(a) 10 = 1, 2, 5, 10

15 = 1, 3, 5, 15

C.F = 1, 5

HCF = 5

(b) 70 = 1, 2, 5, 7, 10, 35, 70

120 = 1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120

C.F : 1, 2, 5, 10

HCF = 10

Page No.

Date : / /

(c) 42 = 1, 2, 3, 6, 7, 14, 21, 42

64 = 1, 2, 4, 8, 16, 32, 64

C.F. = 1, 2

HCF = 2

(d) 100 = 1, 2, 4, 5, 10, 20, 25, 50, 100

120 = 1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120

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

C.F = 1, 2, 4, 5, 10, 20

H.C.F = 20

(e) 256 = 1, 2, 4, 8, 16, 32, 64, 128, 256

132 = 1, 2, 3, 4, 6, 11, 22, 33, 44, 66, 132

64 = 1, 2, 4, 8, 16, 32, 64

C.F = 1, 2, 4

H.C.F = 4

Date : / /

~~Q.2~~

(f) 500 = 1, 2, 4, 5, 10, 20, 25, 50, 100, 125, 250, 500

625 = 1, 5, 25, 125, 625

225 = 1, 3, 5, 9, 15, 25, 45, 75, 225

C.F = 1, 5, 25

HCF = 25

(g) 200 = 1, 2, 4, 5, 8, 10, 20, 25, 40, 50, 100, 200

400 = 1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100,

~~650 =~~ 200, 400

650 = 1, 2, 5, 10, 13, 25, 26, 50, 65, 130, 325,

650

C.F = 1, 2, 5, 10, 25, 50

H.C.F = 50

PAGE No.
DATE

EX: 5(C)

Q.2 Find HCF by prime factorisation method

(a) 32, 40

2	32
2	16
2	8
2	4
2	2
	1

2	40
2	20
2	10
5	5
	1

$32 = (2)\times 2\times 2\times 2\times 2\times 2$

$40 = (2)\times 2\times 2\times 5$

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

(b) 50, 80

2	50
5	25
5	5
	1

2	80
2	40
2	20
2	10
5	5
	1

$50 = (2)\times 5\times 5$

$80 = (2\times 2\times 2\times 2\times 5)$

$HCF = 2\times 5 = 10$

(c) 130, 150

2	130
5	65
13	13
	1

2	150
3	75
5	25
5	5
	1

$130 = (2)\times 5\times 13$

$150 = (2)\times 3\times (5)\times 5$

$HCF = 2\times 5 = 10$

(d) 132, 140, 250

2	132
2	66
3	33
11	11
	1

2	140
2	70
5	35
7	7
	1

2	250
5	125
5	25
5	5
	1

132 - (2) x 2 x 3 x 11
140 - (2) x 2 x 5 x 7
250 - (2) x 5 x 5 x 5

HCF = 2

(e) 165, 285, 225

3	165
5	55
11	11
	1

3	285
5	95
19	19
	1

3	225
3	75
5	25
5	5
	1

165 - (3) x (5) x 11
285 - (3) x (5) x 19
225 - (3) x 3 x (5) x 5

HCF = 3 x 5 = 15

(f) 90, 450, 1875

2	90
3	45
3	15
5	5
	1

2	450
3	225
3	75
5	25
5	5
	1

3	1875
5	625
5	125
5	25
5	5
	1

90 - 2 x (3) x 3 x (5)
450 - 2 x (3) x 3 x (5) x 5
1875 - (3) x 5 x 5 x (5) x 5

HCF = 3 x 5 = 15

(g) 500, 750, 1000

2	500
2	250
5	125
5	25
5	5
	1

2	750
3	375
5	125
5	25
5	5
	1

2	1000
2	500
2	250
5	125
5	25
5	5
	1

$500 = (2 \times 2 \times 5 \times 5 \times 5)$

$750 = (2 \times 3 \times 5 \times 5 \times 5)$

$1000 = (2 \times 2 \times 2 \times 5 \times 5 \times 5)$

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

= 250

PAGE No.

DATE

Checkpoint 5C.

Q.3 Find the HCF by long division method.

(a)

$$\begin{array}{r|l} 18 & 90 \\ & -90 \\ \hline & 00 \end{array} \quad 5$$

HCF = **18**

(b)

$$\begin{array}{r|l} 92 & 132 \\ & -92 \\ \hline & 40 \end{array} \quad 1$$

$$\begin{array}{r|l} 40 & 92 \\ & -80 \\ \hline & 12 \end{array} \quad 2$$

$$\begin{array}{r|l} 12 & 40 \\ & -36 \\ \hline & 04 \end{array} \quad 3$$

$$\begin{array}{r|l} 04 & 12 \\ & -12 \\ \hline & 00 \end{array} \quad 3$$

HCF = **4**

(c)

330) 1331 (4
- 1320
11) 330 (30
- 330
000

HCF = 11

(d)

132) 1100 (8
- 1056
44) 132 (3
- 132
000

Initial HCF = 44

44) 88 (2
- 88
00

Final HCF = 44

(c)

```
52 ) 197 ( 3
     156
     ---
 41 ) 52 ( 1
      41
      --
      11 ) 41 ( 3
           33
           --
           8 ) 11 ( 1
               8
               -
               3 ) 8 ( 2
                   6
                   -
                   2 ) 3 ( 1
                       2
                       -
                       1 ) 2 ( 2
                           2
                           -
                           0
```

HCF

HCF of 197 and 52 is 1

```
HCF — 1 ) 9 ( 9
          9
          -
          0
```

∴ HCF of 197, 52 and 9 is 1

(f)

$$
\begin{array}{r|l}
1 & 2 \;(\; 2 \\
 & -2 \\
 & \hline
 & 0
\end{array}
$$

Initial HCF = $\boxed{1}$

$$
\begin{array}{r|l}
1 & 3 \;(\; 3 \\
 & -3 \\
 & \hline
 & 0
\end{array}
$$

Final HCF = $\boxed{1}$

(g)

$$
\begin{array}{r|l}
275 & 350 \;(\; 1 \\
 & -275 \\
 & \hline
75 & 275 \;)\; 3 \\
 & -225 \\
 & \hline
50 & 75 \;(\; 1 \\
 & -50 \\
 & \hline
25 & 50 \;(\; 2 \\
 & -50 \\
 & \hline
 & 00
\end{array}
$$

Initial HCF = 25

$$
\begin{array}{r|l}
25 & 625 \;(\; 25 \\
 & -625 \\
 & \hline
 & 000
\end{array}
$$

Final HCF = $\boxed{25}$

Page No.

Date : / /

Q4. Find the greatest number that exactly divides 155 and 2115.

155 | 2115 | 13
-2015
100) 155 (1
-100
55 (100 (1
-55
45) 55) 1
-45
10) 45 | 4
-40
5) 10 (2
-10
0

HCF = 2

∴ The greatest number that exactly divides 155 & 2115 is 5.

Q.5 If a number leaves remainder 2, then after subtracting 2 from each number, that number should divide them exactly.

HCF of (194-2) = 192 and (546-2) = 544

$$
\begin{array}{r}
192 \overline{)544}\,(2 \\
-384 \\
\hline
160 \overline{)192}\,(1 \\
-160 \\
\hline
\text{HCF} \longrightarrow 32 \overline{)160}\,(5 \\
-160 \\
\hline
0
\end{array}
$$