Chapter 6 :- Rounding Off – Estimation

EX – 6 A

1.Find the half way number between :-

a) 18000 and 19000 = 18,500

c) 4 00 000 and 5 00 000 = 4 ,50 ,000

f) 90000 and 1 00 000 = 95, 000 .

2. Round off to nearest tens :-

a) 316 = 320

c)1242 = 1240

e)1003 = 1000

f)9992 = 9990

h)106921 = 106920

3.Round off to nearest hundreds:-

a)269 = 300 d)26178 = 26200 f) 10040 = 10000

h)99978 = 100000

4.Round off to nearest thousands :-

a)1840 = 2000 c) 28 706 = 29 000 e) 49 875 = 50 000

h) 3 99 899 = 4 00 000 i) 2 00 673 = 2 01 000

5. Round off to nearest ten thousands :-

a)24,784 = 20,000 c) 55,555 = 60,000 e) 7,28,173 = 7,30,000

h) 43,00,888 = 43,00,000 i) 59,82,696 = 59,80,000.

6.Round off to nearest lakh:-

a) 5,72,682 = 6,00,000 c)9,82,468 = 10,00,000
e)15,49,300=15,00,000 h)49,70,999 = 50,00,000

7.Round off to nearest crore :-

a)14,25,56,800 = 14,00,00,000

c)2,92,50,000 = 3,00,00,000

e) 69,74,25,009 = 70,00,00,000

8.Approximate to i) tens and ii) hundreds :-

a) 546 – i) 550 ii) 500

c)937 – i)940 ii) 900

e) 53712 – i)53,710 ii)53,700

g) 4939 – i)4940 ii)4900

i) 2,99,999 – i) 3,00,000 ii) 3,00,000.

Ex-6 (B)

1 a) 2935908 + 3644009 + 4999078
= 29,00,000 + 36,00,000 + 50,00,000
= 1,15,00,000 (Ans)

c) 67,00,500 + 39,58,389 + 8,88,642
= 67,00,000 + 40,00,000 + 9,00,000
= 1,16,00,000 (Ans)

2 a) 53,708 − 48,677
= 50,000 − 50,000
= 0

c) 1,87,355 − 89,856
= 1,90,000 − 90,000
= 1,00,000

3 a) 7603 × 2
= 8000 × 2
= 16000

c) 41750 ÷ 3
= 42000 ÷ 3
= 14000

f) 89666 ÷ 15
= 90000 ÷ 15
= 6,000

4 a) ₹ 320.50p
= ₹ 321

₹ 68.25p
= ₹ 68

₹ 3.70p
= ₹ 4

b) 8:50 pm
= 9 pm

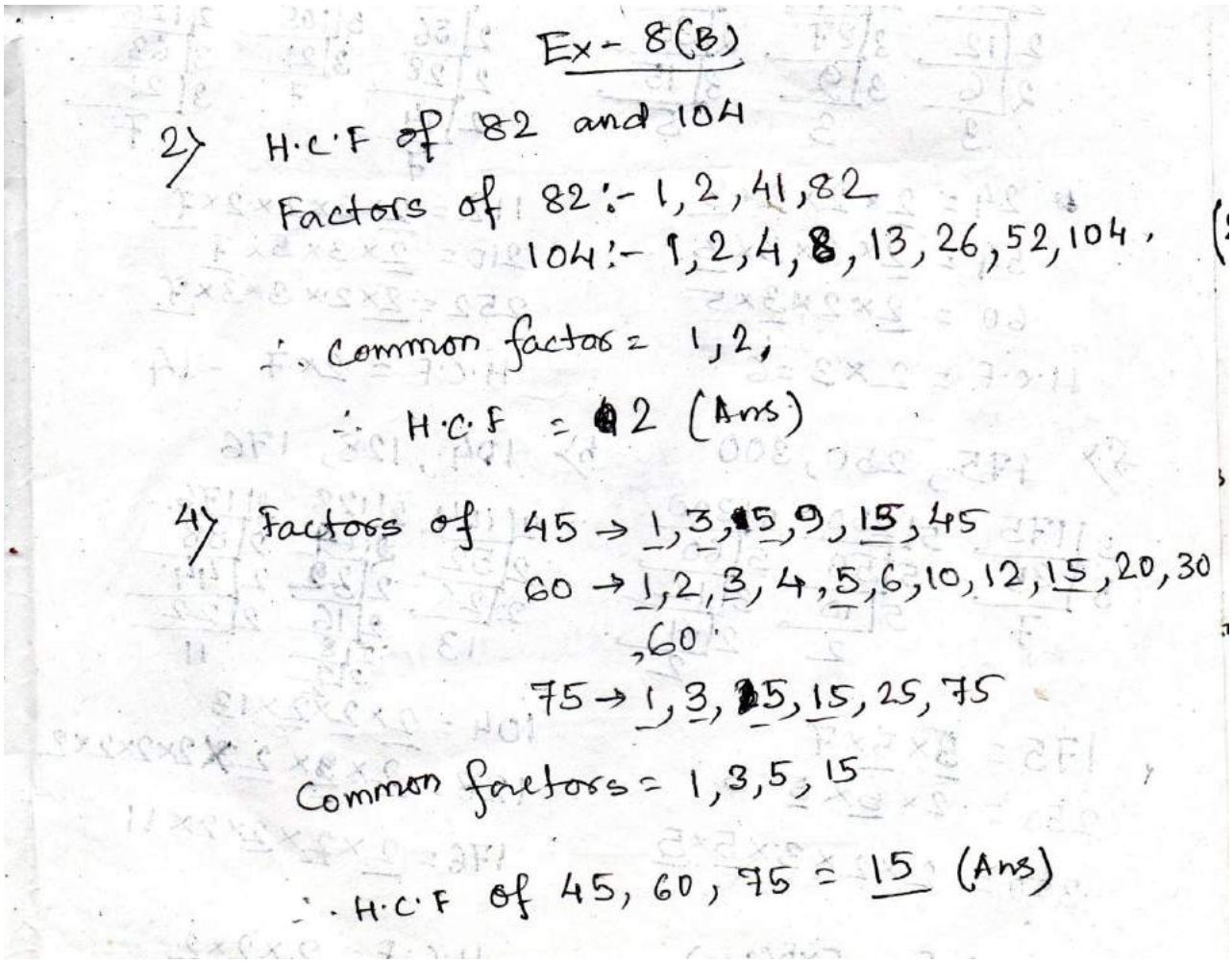
6:10 am
= 6 am

8:30 am
= 9 am.

c) 10 yrs 10 months
= 11 yrs

5 yrs 3 months
= 5 yrs

CHAPTER – 8 EX- 8 (B)



Ex - 8(B)

2) H.C.F of 82 and 104

Factors of 82 :- 1, 2, 41, 82

104 :- 1, 2, 4, 8, 13, 26, 52, 104.

∴ Common factors = 1, 2,

∴ H.C.F = 2 (Ans)

4) Factors of 45 → 1, 3, 5, 9, 15, 45

60 → 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60

75 → 1, 3, 5, 15, 25, 75

Common factors = 1, 3, 5, 15

∴ H.C.F of 45, 60, 75 = 15 (Ans)

5) Common factors of 18, 28, 46, 58

18 → 1, 2, 3, 6, 9, 18.

28 → 1, 2, 4, 7, 14, 28

46 → 1, 2, 23, 46

58 → 1, 2, 29, 58.

Common factors :- 1, 2

∴ H.C.F of 18, 28, 46, 58 = 2

6 H.C.F by prime factor method :-

b) 24, 54, 60

24	54	60
2 | 24	2 | 54	2 | 60
2 | 12	3 | 27	2 | 30
2 | 6	3 | 9	3 | 15
3	3	5

24 = 2 × 2 × 2 × 3

54 = 2 × 3 × 3 × 3

60 = 2 × 2 × 3 × 5

H.C.F = 2 × 3 = 6.

d) 112, 210, 252

112	210	252
2 | 112	2 | 210	2 | 252
2 | 56	5 | 105	2 | 126
2 | 28	3 | 21	3 | 63
2 | 14	7	3 | 21
7		7

112 = 2 × 2 × 2 × 2 × 7

210 = 2 × 3 × 5 × 7

252 = 2 × 2 × 3 × 3 × 7

H.C.F = 2 × 7 = 14

f) 175, 250, 300

175	250	300
5 | 175	5 | 250	5 | 300
5 | 35	5 | 50	5 | 60
7	5 | 10	3 | 12
	2	2 | 4
		2

175 = 5 × 5 × 7

250 = 2 × 5 × 5 × 5

300 = 2 × 2 × 3 × 5 × 5

H.C.F = 5 × 5

= 25 (Ans)

h) 104, 128, 176

104	128	176
2 | 104	2 | 128	2 | 176
2 | 52	2 | 64	2 | 88
2 | 26	2 | 32	2 | 44
13	2 | 16	2 | 22
	2 | 8	11
	2 | 4	
	2	

104 = 2 × 2 × 2 × 13

128 = 2 × 2 × 2 × 2 × 2 × 2 × 2

176 = 2 × 2 × 2 × 2 × 11

H.C.F = 2 × 2 × 2

= 8 (Ans)

Ex-8(B)

7 H.C.F by Division Method :—

b) 34, 51, 85

```
34 | 51 | 1
   | 34 |
   ----
17 | 34 | 2
   | 34 |
   ----
   xx
```

```
17 | 85 | 5
   | 85 |
   ----
   xx
```

∴ H.C.F = 17 (Ans)

d) 650, 900, 1000

```
650 | 900 | 1
    | 650 |
    -----
250 | 650 | 2
    | 500 |
    -----
150 | 250 | 1
    | 150 |
    -----
100 | 150 | 1
    | 100 |
    -----
 50 | 100 | 2
    | 100 |
    -----
    xx
```

```
50 | 1000 | 20
   | 1000 |
   ------
   xx
```

∴ H.C.F = 50

e) 690, 966, 1150

```
690 | 966 | 1
    | 690 |
    -----
276 | 690 | 2
    | 552 |
    -----
138 | 276 | 2
    | 276 |
    -----
    xx
```

```
138 | 1150 | 8
    | 1104 |
    ------
 46 | 138  | 3
    | 138  |
    ------
    xx
```

∴ H.C.F = 46 (Ans)

g) 1350, 1530, 1650

```
1350 | 1530 | 1
     | 1350 |
     ------
 180 ) 1350 ( 7
       1260
       ----
  90 | 180 | 2
     | 180 |
     -----
     xx
```

```
90 ) 1650 ( 18
     90
     ---
     750
     720
     ---
  30 ) 90 ( 3
       90
       --
       xx
```

∴ H.C.F = 30 (Ans)

Ex - 8 (c)

1. L.C.M by Prime Factor Method :-

a) 36 and 63

$2 \mid 36$, $2 \mid 18$, $3 \mid 9$, 3

$3 \mid 63$, $3 \mid 21$, 7

$36 \rightarrow 2 \times 2 \times 3 \times 3$

$63 \rightarrow 3 \times 3 \times 7$

$\therefore$ L.C.M $= 3 \times 3 \times 2 \times 2 \times 7$

$= 252$ (Ans)

c) 25 and 100

$5 \mid 25$, 5

$2 \mid 100$, $2 \mid 50$, $5 \mid 25$, 5

$25 = 5 \times 5$

$100 = 2 \times 2 \times 5 \times 5$

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

$= 100$ (Ans)

e) 12, 15, 18, 36

$2 \mid 12$, $2 \mid 6$, 3

$3 \mid 15$, 5

$2 \mid 18$, $3 \mid 9$, 3

$3 \mid 36$, $3 \mid 12$, $2 \mid 4$, 2

$12 = (2) \times (2) \times (3)$

$15 = (3) \times 5$

$18 = (2) \times (3) \times (3)$

$36 = (3) \times (3) \times (2) \times (2)$

$\therefore$ L.C.M $= 3 \times 2 \times 3 \times 2 \times 5$

$= 180$ (Ans)

f) 20, 50, 60, 100

$2 \mid 20$, $2 \mid 10$, 5

$2 \mid 50$, $5 \mid 25$, 5

$2 \mid 60$, $2 \mid 30$, $3 \mid 15$, 5

$2 \mid 100$, $2 \mid 50$, $5 \mid 25$, 5

$20 = 2 \times 2 \times 5$

$50 = 2 \times 5 \times 5$

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

$100 = 2 \times 2 \times 5 \times 5$

L.C.M $= 2 \times 2 \times 5 \times 5 \times 3$

$= 300$ (Ans)

2. L.C.M by division Methods :-

a) 22, 44, 66

2	22, 44, 66
11	11, 22, 33
	1, 2, 3

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

L.C.M = 132

g) 8, 40, 54, 135

2	8, 40, 54, 135
2	4, 20, 27, 135
3	2, 10, 27, 135
2	2, 10, 9, 45
5	1, 5, 9, 45
3	1, 1, 9, 9
3	1, 1, 3, 3
	1, 1, 1, 1

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

$= 1080$

e) 15, 30, 60, 90

5	15, 30, 60, 90
3	3, 6, 12, 18
2	1, 2, 4, 6
	1, 1, 2, 3

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

L.C.M = 180

8) 26, 39, 65, 52

2	26, 39, 65, 52
13	13, 39, 65, 26
	1, 3, 5, 2

$= 2 \times 2 \times 3 \times 5 \times 13$

L.C.M = 780

Ex-8(D)

- L·C·M × H·C·F = Product of two numbers
- L·C·M = $\frac{\text{Product of two numbers}}{\text{H·C·F}}$
- H·C·F = $\frac{\text{Product of two numbers}}{\text{L·C·M}}$
- One of the number(b) = $\frac{\text{H·C·F} \times \text{L·C·M}}{\text{Given number(a)}}$

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1 Find H·C·F & L·C·M :-

as 576 and 1440.

H·C·F of 576, 1440

$$\begin{array}{r|l} 576 \overline{)\,1440\,} & 2 \\ \underline{1152} & \\ 288 \overline{)\,576\,} & 2 \\ \underline{576} & \\ \times\times & \end{array}$$

∴ H·C·F = 288

$$\text{L·C·M} = \frac{2}{\cancel{576} \times 1440} \Big/ \cancel{288}_{1}$$

$$= 1440 \times 2$$

$$= 2880$$

Ans:- H·C·F = 288

L·C·M = 2880

Ex-8(D)

1 d) 465 and 1116.

H.C.F of 465 & 1116.

$$\begin{array}{r|l|l} 465 & 1116 & 2 \\ & 930 & \\ \hline 186 & 465 & 2 \\ & 372 & \\ \hline 93 & 186 & 2 \\ & 186 & \\ \hline & \times\times & \end{array}$$

H.C.F = 93

$$L.C.M = \frac{\cancel{465}^{5} \times 1116}{\cancel{93}} = 1116 \times 5 = \underline{5580}$$

Ans:- H.C.F = 93, L.C.M = 5580.

e) 408 and 1530

$$\begin{array}{r|l|l} 408 & 1530 & 3 \\ & 1224 & \\ \hline 306 & 408 & 1 \\ & 306 & \\ \hline 102 & 306 & 3 \\ & 306 & \\ \hline & \times\times & \end{array}$$

H.C.F = 102

$$L.C.M = \frac{\cancel{408}^{4} \times 1530}{\cancel{102}}$$

$$= \underline{6120}$$

H.C.F = 102.
L.C.M = 6120.

2

L·C·M = 720

H·C·F = 5

One of the number = 45

∴ Other number = $\frac{\text{H·C·F} \times \text{L·C·M}}{\text{One of the number}}$

$= \frac{5 \times 720}{45}$ (80, 9)

$= 80$.

Ans:- The other number = 80.

3

Two numbers = 128, 576.

L·C·M = 1152

∴ H·C·F = $\frac{\text{Product of two numbers}}{\text{L·C·M}}$

$= \frac{128 \times 576}{1152}$ (64, 1, 2)

H·C·F = 64 (Ans)

4

ii) Numbers :- 18, 24

Product = $18 \times 24 = 432$

H·C·F = $18 \overline{)24} (1$, 18, $6 \overline{)18} (3$, 18, xx

H·C·F = 6

L·C·M = $\frac{\text{Product of two numbers}}{\text{H·C·F}} = \frac{18 \times 24}{6}$ (3) $= 72$

Product of L.C.M & H.C.F = 72 x 6 = 432 .

8 The greatest 3-digit number that is exactly divisible by 9 and 21.

L.C.M of 9 and 21.

$$3 \mid 9, 21$$
$$3, 7$$

$= 3 \times 3 \times 7 = \underline{63}$

The greatest 3-digit number = 999.

$$63 \overline{)\,999\,(\,15}$$
$$\underline{63}$$
$$369$$
$$\underline{315}$$
$$54$$

The greatest number of 3-digit that is exactly divisible by 63 = $999 - 54 = \underline{945}$

Ans:- 945 is the greatest 3-digit number.

9 The smallest number that divides 12, 16, 20

$$2 \mid 12, 16, 20$$
$$2 \mid 6, 8, 10$$
$$3, 4, 5$$

$= 2 \times 2 \times 3 \times 4 \times 5 = \underline{240}$ (Ans)