

Class: 5
Subject: Mathematics
Chapter: Multiples and Factors

(Answer key)

A.

1. 14, 14
2. 12, 12 of 3 and 4
3. 40, 40 of 8 and 5
4. 54, 54 of 9 and 6

B.

1. 8
2. 9
3. 6
4. 9
5. 9
6. 7

C.

1. 8
2. 7
3. 1
4. 7
5. 6
6. 2

D.

1. Factors of 18 are:
 $1 \times 18 = 18$
 $2 \times 9 = 18$
 $3 \times 6 = 18$
Ans. 1, 2, 3, 6, 9, 18
2. Ans. 1, 2, 4, 7, 14, 28
3. Ans. 1, 2, 3, 4, 6, 9, 12, 18, 36
4. Ans. 1, 3, 7, 21
5. Ans. 1, 5, 7, 35

E. All composite numbers can be expressed as a product of their prime factors.

1. $42 = 2 \times 21$, $21 = 3 \times 7$, $7 = 7 \times 1$

Composite no. 42

Prime factors are $2 \times 3 \times 7$

2. $24 = 2 \times 12$, $12 = 2 \times 6$, $6 = 2 \times 3$, $3 = 3 \times 1$

Composite no. 24

Prime factors are $2 \times 2 \times 2 \times 3$

3. $50 = 2 \times 25$, $25 = 5 \times 5$, $5 = 5 \times 1$

Composite no. 50

Prime factors are $2 \times 5 \times 5$

4. $63 = 3 \times 21$, $21 = 3 \times 7$, $7 = 7 \times 1$

Composite no. 63

Prime factors are $3 \times 3 \times 7$

5. $81 = 3 \times 27$, $27 = 3 \times 9$, $9 = 3 \times 3$, $3 = 3 \times 1$

Composite no. 81

Prime factors are $3 \times 3 \times 3 \times 3$

6. $66 = 2 \times 33$, $33 = 3 \times 11$, $11 = 11 \times 1$

Composite no. 66

Prime factors are $2 \times 3 \times 11$

F.

1. 16, 20

Factor method

Factors of 16

1×16

2×8

4×4

Factors of 20

1×20

2×10

4×5

Factors of 16 = 1, 2, 4, 8, 16

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

Common factors = 1, 2, 4

Therefore HCF = 4 Ans.

Prime factorization method

$16 = 2 \times 8$, $8 = 2 \times 4$, $4 = 2 \times 2$, $2 = 2 \times 1$

$20 = 2 \times 10$, $10 = 2 \times 5$, $5 = 5 \times 1$

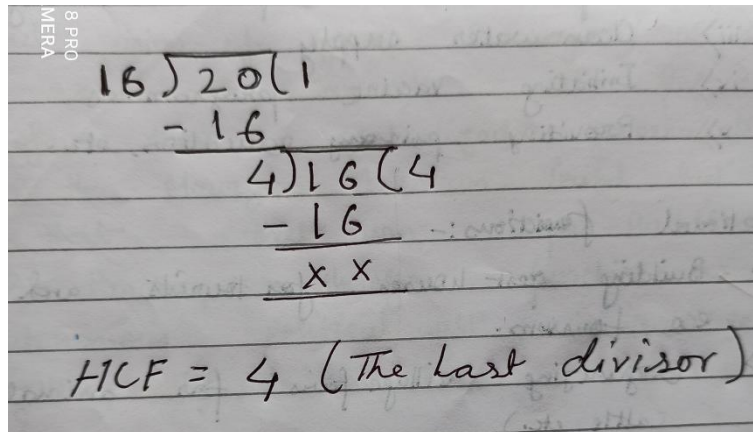
Prime factors of 16 = $2 \times 2 \times 2 \times 2$

Prime factors of 20 = $2 \times 2 \times 5$

Common prime factors = 2×2

Therefore HCF = 4 Ans.

Long division method



2. HCF = 5 Ans.

3. HCF = 2 Ans.

4. HCF = 5 Ans.

G.

1. 24, 36

Prime Factorization method

$24 = 2 \times 12$, $12 = 2 \times 6$, $6 = 2 \times 3$, $3 = 3 \times 1$

$36 = 2 \times 18$, $18 = 2 \times 9$, $9 = 3 \times 3$, $3 = 3 \times 1$

(Multiply the common factors only once)

Therefore LCM = $2 \times 2 \times 3 \times 2 \times 3 = 72$ Ans.

Short Division Method

2	24	36
2	12	18
2	6	9
3	3	9
3	1	3
	1	1

Therefore LCM = $2 \times 2 \times 2 \times 3 \times 3 = 72$ Ans.

2. LCM = 210 Ans
3. LCM = 150 Ans
4. LCM = 120 Ans

H.

1. LCM x HCF of two numbers = Product of the numbers

Given number = 12, 15

Product of the numbers = $12 \times 15 = 180$

HCF of 12 and 15 (using the prime factorization method)

$12 = 2 \times 6, 6 = 2 \times 3, 3 = 3 \times 1$

$15 = 3 \times 5, 5 = 5 \times 1$

Common prime factors = 3

\therefore HCF = 3

LCM of 12 and 15 (using the prime factorization method)

$12 = 2 \times 6, 6 = 2 \times 3, 3 = 3 \times 1$

$15 = 3 \times 5, 5 = 5 \times 1$

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

Product of HCF and LCM = $3 \times 60 = 180$ (proved)

2. Product of numbers = $6 \times 9 = 54$

HCF of 6 and 9 = 3

LCM of 6 and 9 = 18

\therefore HCF x LCM = $3 \times 18 = 54$ (proved)

3. Product of numbers = $10 \times 15 = 150$

HCF of 10 and 15 = 5

LCM of 10 and 15 = 30

\therefore HCF x LCM = $5 \times 30 = 150$ (proved)

4. Product of numbers = $4 \times 6 = 24$

HCF of 4 and 6 = 2

LCM of 4 and 6 = 12

\therefore HCF x LCM = $2 \times 12 = 24$ (proved)
