

HCF and LCM: the Ladder Method

ANSWERS

1

Find the HCF of 24 and 40.

2	24	40
2	12	20
2	6	10
	3	5

$$\text{HCF} = 2 \times 2 \times 2 = 8$$

2

Find the HCF of 30 and 50.

2	30	50
5	15	25
	3	5

$$\text{HCF} = 2 \times 5 = 10$$

3

Find the HCF of 18 and 24.

2	18	24
3	9	12
	3	4

$$\text{HCF} = 6$$

4

Find the HCF of 42 and 70.

2	42	70
7	21	35
	3	5

$$\text{HCF} = 14$$

5

Fill in the missing numbers.
Then find the HCF of 60 and 84.

2	60	84
2	30	42
3	15	21
	5	7

$$\text{HCF} = 12$$

6

Find the HCF of 12 and 48.
What do you notice?

2	12	48
2	6	24
3	3	12
	1	4

$$\text{HCF} = 12$$

12 is a factor of 48

7

Mia has 45 red beads and 60 blue beads.
She makes bracelets that are all the same and uses every bead.
What is the greatest number of bracelets she can make?

3	45	60
5	15	20
	3	4

$$\text{HCF} = 15 \text{ bracelets}$$

8

Here is Sam's ladder for 36 and 54.
Sam says the HCF is 6. What has Sam done wrong? Find the HCF.

2	36	54
3	18	27
	6	9

3 is a factor of 6 and 9.
Sam stopped too soon.

$$\text{HCF} = 18$$

HCF and LCM: the Ladder Method *further practice*

ANSWERS

9

Find the LCM of 20 and 30.

2	20	30
5	10	15
	2	3

$$\text{LCM} = 10 \times 2 \times 3 = 60$$

10

Find the LCM of 18 and 27.

3	18	27
3	6	9
	2	3

$$\text{LCM} = 9 \times 2 \times 3 = 54$$

11

Find the LCM of 16 and 40.

2	16	40
2	8	20
2	4	10
	2	5

$$\text{LCM} = 80$$

12

Find the LCM of 28 and 42.

2	28	42
7	14	21
	2	3

$$\text{LCM} = 84$$

13

A green light flashes every 8 seconds.
A blue light flashes every 12 seconds.
They flash together now.
How many seconds until they next flash together?

2	8	12
2	4	6
	2	3

$$\text{LCM} = 24 \text{ seconds}$$

14

Stickers come in sheets of 12.
Badges come in boxes of 18.
Priya wants the same number of stickers as badges. What is the smallest number of each she can have?
How many sheets and how many boxes is that?

2	12	18
3	6	9
	2	3

$$\text{LCM} = 36 \text{ of each}$$

$$\text{LCM} = 3 \text{ sheets and } 2 \text{ boxes}$$

15

Here are the side and the bottom of a ladder. What were the two numbers?
Find their LCM.

2	30	42
3	15	21
	5	7

$$\text{Numbers} = 30 \text{ and } 42$$

$$\text{LCM} = 210$$

16

Ali says the LCM of two numbers is always the two numbers multiplied together.
Is Ali right? Explain.

$$\text{No. The LCM of 4 and 6 is 12, not 24.}$$

$$\text{Only when no prime is a factor of both.}$$