

Exercise 2E

2 36, 48, 54

2 18, 24, 27

3 9, 12, 27

3 3,4,9

3 1,4,3

21,4,1

2 1,2,1

1,1,1

The required distance = $2 \times 2 \times 3 \times 3 \times 3 \times 2 \times 2$

 $= 16 \times 27$

=432 cm

: They will step together again at a distance of 432 cm from the starting point.

Q27

Answer:

The time when the lights will change simultaneously again will be quantity which is exactly divisible by 48, 72 and 108. The least time when they change simultaneously will be given by their LCM.

2 48,72,108

2 24, 36, 54

2 12, 18, 27

26,9,27

33,9,27

31,3,9

3 1,1,3

1,1,1

Required time = $2^4 \times 3^3$

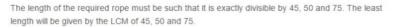
= 432 seconds

= 7 min 12 seconds

So, the lights will change simultaneously at 8:07:12 a.m.

Q28

Answer:



2 45,50,75 3 45,25,75 3 15,25,25 5 5,25,25 5 1,5,5

Required length = $3 \times 3 \times 5 \times 5 \times 2$ = 450 cm

So, the minimum length of the rope that can be measured by the full length of each of the three rods is 450 cm.

Q29

Answer:

1,1,1

The LCM of the time intervals of the beeps will give the time when the electronic devices will beep together.

LCM of 15 and 20:

5 15,20 3 3,4 2 1,4

|1,1|

Required time = $5 \times 3 \times 2 \times 2$ = 60 min

So, they will beep simultaneously after 60 min or 1 h.

:. They will beep together again at 7:00 a.m.

Q30

Answer:

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