PLANETSPARK

Grade 5

Maths NCERT Solutions Maths Mela (English)

Chapter 13: Animal Jumps

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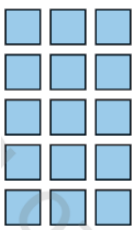
Numbers in the box

a To find the multiplier, we need to figure out a number that , when multiplied by other numbers, gives us 28,36,48 and 72.
28/4 = 7, 36/9 = 9, 48/4 = 12, 72/4 = 18
As we can see to divide given number with 4 we will get 7, 9, 12, 18. So, we can multipy the numbers with 4.
7 * 4 = 28
9 * 4 = 36
12* 4 = 48
18 * 4 = 72
Therefore, the multiplier is 4.

b Yes, it is also a multiplier of number 2.

c As we found earlier, the number inside the box are 7, 9, 12 and 18, because when these numbers are multiplied by 4, we get the numbers that came out: 28, 36, 48 and 72.
So, the numbers that might have been put inside the box are 7, 9, 12, 18.

Arrays for the number 15



5 * 3 = 15

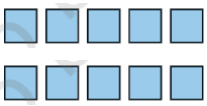
1 * 5 = 15

Let Us Do

Make arrays and identify the factors

1 10

$1 \times 10 = 10$



$2 \times 5 = 10$

Factors: 1, 2, 5, 10

2 14

$1 \times 14 = 14$

$2 \times 7 = 14$

Factors: 1, 2, 7, 14

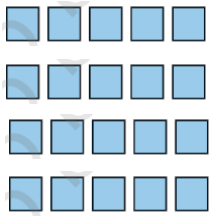
3 13

$1 \times 13 = 13$

13 is a prime number because we cannot make any array other than 1×13, so it has only one factor: 1 and itself

4 20

1 × 20 = 20



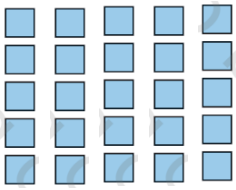
4 × 5 = 20

2 × 10 = 20

Factors: 1, 2, 4, 5, 10, 20

5 25

1 × 25 = 25

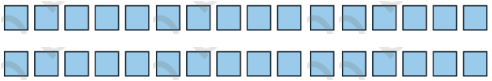


2 × 5 = 25

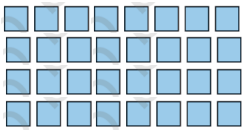
Factors: 1, 5, 25

6 32

1 × 32 = 32



2 × 16 = 32



4 × 8 = 32

7 37

$1 \times 37 = 37$

Factors: 1, 37

37 is a prime number

8 46

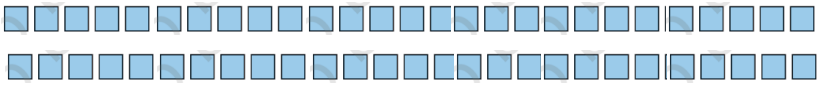
$1 \times 46 = 46$

$2 \times 23 = 46$

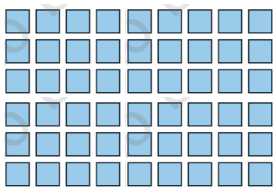
Factors: 1, 2, 23, 46

9 54

$1 \times 54 = 54$



$2 \times 27 = 54$



$6 \times 9 = 54$

$3 \times 18 = 54$

Animal Jumps

1. The common multiples of 3 and 4 are 12, 24, 36, 48, 60, 72 and so on.
2. Common multiples of 3 and 6 are the positions where both insects land: 6, 12. 18, 24, 30, 36.
3. Common multiples of 4 and 6 are 12, 24,36 and so on

Let Us Do

a. Common multiples of 2 and 3: 6, 12, 18, 24, 30

b. Common multiples of 5 and 8: 40, 80, 120, 160,200...

c. Common multiples of 2 and 4: 4, 8, 12, 16, 20

d. Common multiples of 3 and 9: 9, 18, 27, 36, 45,...

e. Common multiples of 5 and 10: 10, 20, 30, 40, 50

f. Common multiples of 9 and 12: 36, 72, 108, 144,180...

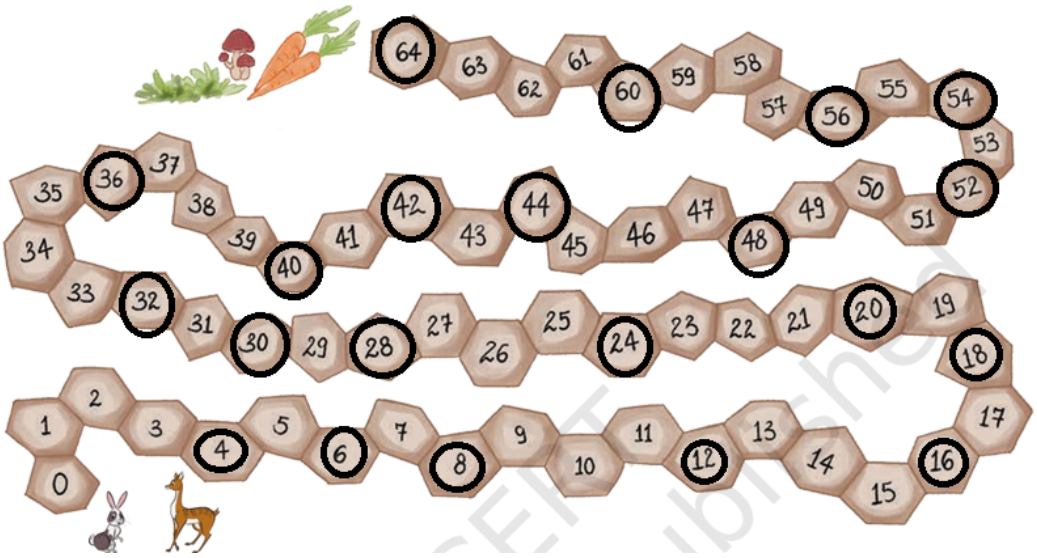
g. Common multiples of 8 and 12: 24, 48, 72, 96, 120

h. Common multiples of 6 and 8: 24, 48, 72, 96, 120,...

i. Common multiples of 6 and 9: 18, 36, 54, 72, 90,...

1 The common multiples are usually multiples of the least common multiple (LCM) of the two numbers. For example, the LCM of 2 and 3 is 6, so the common multiples are all multiples of 6.

2



If Mowgli jumps by 2 steps, he will land on 0,2,4,6,8,10,12,14,16....
So, Mowgli will meet :
Ant at position 4
Frog at position 12
Bird at position 14
Bear at position 30
Rabbit at position 50

Yes, Mowgli met with ant, frog, bird and rabbit.

3 If Mowgli jumps by 3 steps, he will land on 0,3,6,9,12,15,18,21,24,27,30....
So, Mowgli will meet :
Spider at position 9
Frog at position 12
Snake at position 21
Bear at position 30
Deer at position 39
Monkey at position 57

If Mowgli jumps by 5 steps, he will land on 0,5,10,15,20,25,30,35,40....
So, Mowgli will meet his friends at positions 5, 10, 15, 20, 25, 30.

If Mowgli jumps by 10 steps, he will land on 10, 20, 30,40, 50....
10 is the common factor of these numbers
So, Mowgli will meet his friends at positions10, 20, 30, 40, 50.

Common factors of 24 and 36

a Yes

b Yes

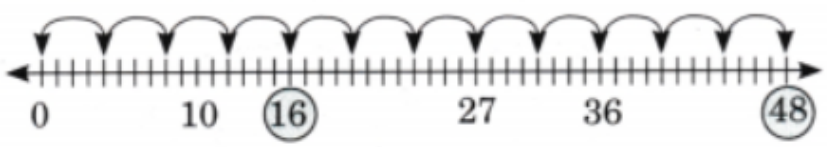
c Yes

d 6 and 12

e 1, 2, 3, 4, 6 and 12

f 1 is the factor of every number

5 Common factors of 12 and 13 are only 1

6 

4 is the common factor of the number 16, 36 and 48.

Common factors of the pairs

a 1, 2 and 4

b 1, 2 and 4

c 1, 2 and 4

d 1

e 1

f 1 and 3

g 1 and 3

h 1 and 3

True and False

a False

b False

c True

d True

e True

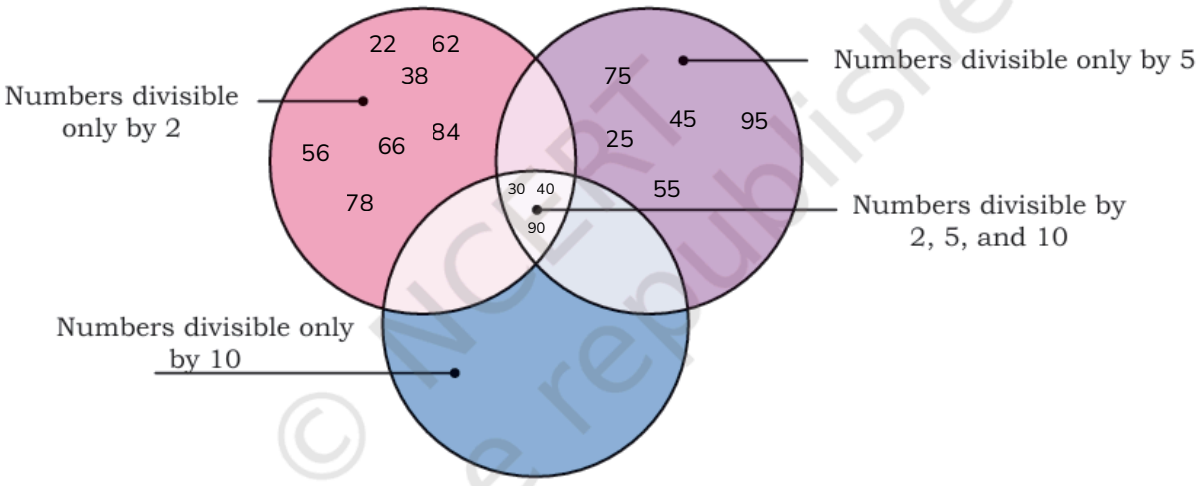
f False

9 They will be hunting together on the days that are common multiple of 3 and 5.
So, if they both start on the same day they hunt together on the 15^{th} day then on 30^{th} , 45^{th} day and so on.

10 Possible jump lengths Mowgli could choose:
2, 3, 6, 10, 15, 30

Possible jump lengths Mowgli could choose: 1 and 7 (common factor of 21 and 35)

11



a 22, 30, 38, 40, 56, 62, 66, 78, 84, 90.

b 25, 30, 40, 45, 55, 75, 90, 95

c 30, 40, 90.

d 30, 40, 90