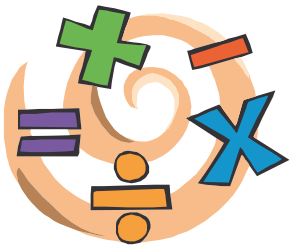
01 **The number N is a multiple of 4. It lies between 10 and 40. 3 is a factor of N. When 4 is added to N, it becomes a multiple of 7.**



a) Find N

b) Find the smallest number that should be subtracted from N to make it a multiple of 5

Your solution here:

02 **A number P has exactly 3 factors. P is between 10 and 30. Find P.**

Your solution here:

03 **Mrs. Tina age now is a multiple of 4. She is younger than 50 years old and is twice as old as Mrs. Kavya now. Next year Mrs. Tina age will be a multiple of 5. How old was Mrs. Kavya last year ?**

Your solution here:

04 a) Have you noticed that A × B is a multiple of A and a multiple of B ?

Using numbers between 0 and 10 for A and B, give

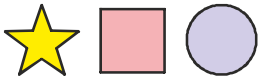
i) an example where A × B is not the smallest common multiple of A and B,

ii) an example where A × B is not the smallest common multiple (but still a common multiple) of A and B.

In the second case, is there any relationship between the smallest common multiple of A and B and the actual value of A × B ?

b) Using the above mentioned facts as clues, find a number which leaves a remainder of 9 when divided by 10, a remainder of 8 when divided by 9 and a remainder of 7 when divided by 8.

Your solution here:

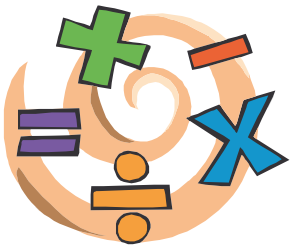
05  is a 3-digit number with digits  ,  ,  .  is a multiple of 4 and  +  +  = 21,    is a multiple of 4 and 6.

a) Is    an odd or even number ?

b) Find the value of   

Your solution here:

01 **The number N is a multiple of 4. It lies between 10 and 40. 3 is a factor of N. When 4 is added to N, it becomes a multiple of 7.**



a) Find N

b) Find the smallest number that should be subtracted from N to make it a multiple of 5

a) N is a multiple of 3 and 4

Multiples of 3 : 3, 6, 9, **12**, 15, 18, 21, **24**, 27, 30, **36**, 39

Multiples of 4 : 4, 8, **12**, 16, 20, **24**, 28, 32, **36**

12 + 4 = 16; 24 + 4 = 28; 36 + 4 = 40

Only 28 is a multiple of 7

Hence, N = 24

Shortcut : 12 is the 1st multiple of 3 and 4. The next common multiples will be 2 × 12, 3 × 12 and so on.

b) N – 0 = 24 (Not a multiple of 5)

N – 1 = 23 (Not a multiple of 5)

N – 2 = 22 (Not a multiple of 5)

N – 3 = 21 (Not a multiple of 5)

N – 4 = 20 (Multiple of 5, 20 ÷ 5 = 4)

Therefore, the smallest number that should be subtracted is 4

Shortcut : Numbers that are multiples of 5 always have 0 or 5 as the last digit

02 **A number P has exactly 3 factors. P is between 10 and 30. Find P.**

[Tip : Usually factors will appear in pairs. If there are an odd number of factors, the original number should be of the form A × A, So that atleast there are 3 factors that are 1, A and (A × A) itself]

3 × 3 = 9 (ignore as it is not in the range);

4 × 4 = 16; 5 × 5 = 25

Factors of 16 : 1, 2, 4, 8, 16 (5 factors)

Factors of 25 : 1, 5, 25 (3 factors)

Therefore, P = 25

03 **Mrs. Tina age now is a multiple of 4. She is younger than 50 years old and is twice as old as Mrs. Kavya now. Next year Mrs. Tina age will be a multiple of 5. How old was Mrs. Kavya last year ?**

Note that Mrs. Tina and Mrs Kavya indicate they are adults

Multiple of 4 indicates an even number

Since Mrs. Tina's age + 1 year is a multiple of 5 (which ends with a '5' or '0' only), Mrs. Tina's age now must end with '4'

Mrs. Tina is younger than 50 years old now and she is an adult, so the possible age is either 24 or 44

24 ÷ 2 = 12; 44 ÷ 2 = 22

Mrs. Kavya should be 22 years old now since she is also an adult

22 – 1 = 21. Mrs. Kavya was 21 years old last year

04

a) Have you noticed that A × B is a multiple of A and a multiple of B ?

Using numbers between 0 and 10 for A and B, give

i) an example where A × B is not the smallest common multiple of A and B,

ii) an example where A × B is not the smallest common multiple (but still a common multiple) of A and B.

In the second case, is there any relationship between the smallest common multiple of A and B and the actual value of A × B ?

b) Using the above mentioned facts as clues, find a number which leaves a remainder of 9 when divided by 10, a remainder of 8 when divided by 9 and a remainder of 7 when divided by 8.

a) i) A = 3, B = 4: A × B = 12. 12 is the smallest common multiple of 3 and 4. (This happens when A and B have no common factor other than 1)

ii) A = 4, B = 6: A × B = 24, which is a common multiple of 4 and 6

24 is a multiple of 12, which is the smallest common multiple of 4 and 6

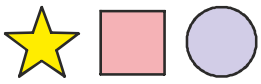
b) Note that the answer should be 1 less than a common multiple of 10, 9 and 8

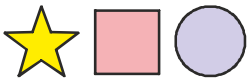
A common multiple of 8 & 9 : 8 × 9 = 72

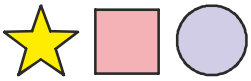
A common multiple of 8, 9 & 10 is 72 × 10 = 720

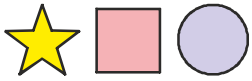
(The smallest common multiple of 8, 9 & 10 is 360)

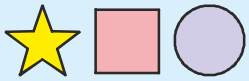
One answer is : 720 – 1 = 719

05  **is a 3-digit number with digits**  **,**  **,**  **.**

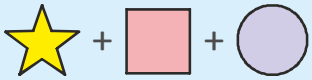
 **is a multiple of 4 and**  **= 21,**  **is a multiple of 4 and 6.**

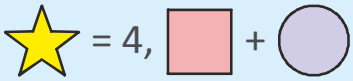
a) Is  **an odd or even number ?**

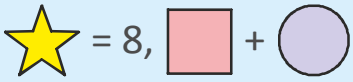
b) Find the value of 

a)  is an even number as it is a multiple of 4

b)  has to be 4 or 8 only since it is a multiple of 4

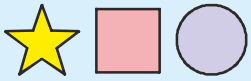
Since  = 21

if  = 17 and

if  = 13

You will see that only 498, 876 and 894 satisfy the above two conditions and the fact that the number is even.

Of these numbers, only 876 is a multiple of both 4 and 6

So,  = 876