MATHS

BOOKS - MBD

BRAIN-TEASERS

Example

1. From a basket of mangoes when counted in twos there was one extra, when counted in threes there were two extra, when counted in

fours there were three extra, when counted in fives there were four extra, when counted in sixes there were five extra . But when counted in sevens there no extra.Ateast how many mangoes were thee in the basket?

2. A boy was asked to find the L.C.M. of 3, 5, 12, and another number. But while calculating, he wrote 21 instead of 12 and yet came with the correct answer. ... We will assume the fourth

number to be x. First, we will write down the given numbers as a product of their prime factors.

3. There were five pieces of clothes of length 15m,21m,36m,42m,48m.But all of them could be measured in whole units of a measuring rod. What could be the largest length of the rod?

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4. There are three cans one of them holds exactly 10 litres of milk and useful the other two can hold a 7 litres and 3 litres respectively then no graduation mark on the cans customer ask for 5 litres of milk how would you give him the amount he ask he would not be satisfied by estimates.

5. Which two digit numbers when added to 27 get reversed?

6. Cement mortar was being prepared by mixing cement to sand im the ratio of 1:6 by volume. In cement mortar of 42 units of volume, how much more cement needs to be added to enrich the mortar to the ratio 2:9?

7. In a solution of common salt in water, the ratio of salt to water was 30 :70 as per weight. If we evaporate 100 grams of water from one kilogram of this solution, what will be the ratio of the salt to water by weight?

8. Half a swarm of bees went to collect honey from a mustard field.Three fourth of the rest

went to a rose garden .The rest ten were still undecided.How many bees were there in all?

9. If the cost of the 20 pens is Rs.180, calculate the cost of 5 pens

10. You have been given two cans with capacities 9 and 5 liters respectively. There is

no graduation marks on the cans nor is eye estimation possible. How can you collect 3 litres of water from a tap? (you are allowed to pour out water from the can). If the cans had capacities 8 and 6 litres respectively, could you collect 5 liters?

11. The area of the east wall of an auditorium is 108 sq m,the area of the north wall is 135 sq m

and the area of the floor is 180 sq m.Find the height of the auditorium.

12. If we subtract 4 from the digit at the units place of a two digit number and add 4 to the digit at the tens place then the resulting number is doubled. find the number.

13. Two boatmen start simultaneously from the opposite shore of a river with same speed and they cross eachother after 45 minutes of their starting from the respective shores. They rowed till theyreached the opposite shore and returned immediately after, reaching the shores. When willthey cross each other again?

14. Three girls are climbing down a staircase.One girl climbs down two steps at one go.The second girl three steps at one go and the third climbs down four steps.They started together from the beginning of the staircase leaving their foot marks.They all came down in complete steps an had their foot marks together at the bottom of the staircase.In how many steps would there be only one pair of foot mark?

15. A group of soldiers was asked to fall in line making rows three.It was found that there was one soldier extra.Then they were asked to stand in rows of five.It was found there were 2 soldiers too many.they were three soldiers who could not be adjusted.At least how many soldeirs were there in the group?

16. Get 100 using four 9's and some of the symbols like +,-,xx, etc.

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17. How many digits would be in the product $2 \times 2 \times 2....... \times 2(30 \text{ times})$?

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18. A man would be 5 minutes late to reach his destination if he rides his bike at 30 km per hour.But he would be 10 minutes early if he rides at the speed of 40 km per hour.What is the distance of his destination from where he starts?

19. The ratio of speeds of two vehicles is 2:3.If the first vehicle covers 50 km in 3 hours what

distance would the second vehicle cover in 2 hours?

20. The ratio of income to expenditure of Mr.Natarajan is 7:5.If he saves Rs.2000/- a month what could be his income?

21. the ratio of the length to breadth of a lawn is 3:5.It costs Rs.3200/- to fence it at rate of Rs.2/- a metre.What would be the cost of developing the lawn at the rate of Rs.10/- per square metre.

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22. If one counts one for the thumb, two for the index finger, three for themiddle finger, four for the ring finger, five for the little finger

and continuescounting backwards, six for the ring finger, seven for the middle finger,eight for the index finger, 9 for the thumb, ten for the index finger, elevenfor the middle finger, twelve for the ring finger, thirteen for the littlefinger, fourteen for the ring finger and so on. Which finger will be countedas one thousand?
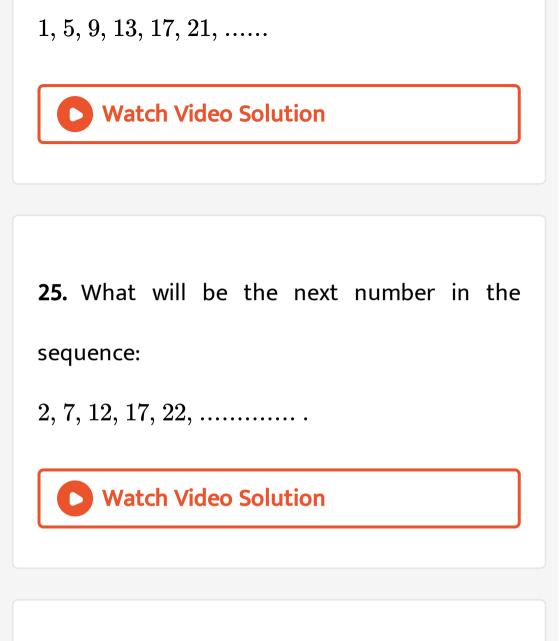
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23. Ten saplings are to be planted in straight lines in such way that each line has exactly four of them.

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24. What will be the next number in the sequence:

1, 5, 9, 13, 17, 21, ...

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25. What will be the next number in the sequence:

2, 7, 12, 17, 22, ...

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26. What will be the next number in the sequence:

2, 6, 12, 20, 30, ...

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27. What will be the next number in the sequence:

1, 2, 3, 5, 8, 13, ...

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28. What will be the next number in the sequence:

1, 3, 6, 10, 15, ...

29. Observe the pattern in the following statement:

$31 \times 39 = 13 \times 93$

The two numbers on each side are co-prime and are obtained by reversing the digits of respective numbers.Try to write some more pairs of such numbers.