

Mathematics

(Linear equations in two variables)

1. The difference between the length and width of a rectangle is 7cm. The perimeter of the rectangle is 50cm. Find the length and width of the rectangle.
2. A says to B, “ If you give me one of your stamps, we shall equal number of stamps”. B says to A, “If you give me one of your stamps, I shall have twice as many as you will be left with”. How many stamps do each one have?
3. The sum of the digits of a two - digit number is 14. If the ten’s digit is increased by 4 and the unit’s digit is decreased by 4, the digits of the number are interchanged. Find the number.
4. On interchanging the digits of a number, it become $\frac{5}{6}$ of what it was before. If the difference between the two digits is one, find the number.
5. When one is subtracted from each of the two given numbers, their ratio become 2:3 and if one is added to each, the ratio become 7:10. Find the numbers.
6. Six year ago, the age of a father was thrice the age of his son. Six year hence, his age will be double the age of his son. Find their present ages.
7. The present age of a father is three years more than thrice the age of his son. Three years hence, the father will be 10 years more than twice the age of his son. After how many years the father’s age will be double the age of the son?
8. Mahesh invested Rs.3500, partly at 5% per annum and the remainder at 3% per annum. The total interest gained by him on the money in one year was Rs145. How much did he invest at 3%?

9. A person invested Rs.20,000 and Rs.30,000 at two different rates of interest, earning Rs.1400 at the end of year. Later, he found that by interchanging the rates of interest for the two amounts invested, he would have earned Rs200 more. Find the two rates of interest at which he invested his money.
10. A chemist has two kinds of salt solutions, one is 75% pure solution and the other is 60% pure solution. How many litres of each kind should he mix to obtain 21 litres of 70% pure solution?
11. A helicopter flies with the wind at the rate of 75km/h and against the wind at 45km/h. Find the speed of the wind and that of the helicopter in still air.
12. By selling a table and a chair for Rs.1896, a trader gains 25% on the table and 10% on the chair. If he sells them for Rs1770, he makes a profit of 10% on the table and 25% on the chair. Find the cost price of each.
13. The width of a rectangle is two – third of its length and the length exceeds the width by 7cm. Find the perimeter of the rectangle.
14. Monthly bill for a mobile phone consists of fixed rental charge plus charges per call exceeding 150 calls. A person pays a bill of Rs.1200 for 550 calls while the bill with 630 calls is Rs.1360.
- Find the amount of bill if a person makes 800 calls.
 - How many calls a person has made if his bill is Rs.2350?
15. A part of monthly expenses of a family is constant and remaining varies with the price of wheat. When wheat is Rs800 a quintal, the total monthly expenses of the family are Rs.3160 and when it is Rs770 a quintal, the total monthly expenses are Rs.3154. Find the total monthly expenses when cost of wheat is Rs900 a quintal.

Answers:

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| 1. Length = 16cm and width = 9cm, | 2. A=5 stamps, B = 7 stamps, | 3. 59 | 4. 54 |
| 5. 13 and 19 | 6. 42years, 18years | 7. After 13 years | 8. Rs.1500 |
| 9. Rs20,000 at 4% and Rs.30,000 at 2% | 10. 14 lit of 75% and 7 lit of 60% | 11. 60km/h, 15km/h | |
| 12. Rs1200, Rs360 | 13. 70cm | 14. Rs1700 and 1125 calls | 15. Rs.3180 |