

2 days, and *B* and *C* in 3 days. If \$6 be paid for the piece of work, what are a day's wages of each workman?

6. A tax of \$530 is to be raised from 3 towns, the numbers of inhabitants of which are respectively 2500, 3000, and 4200. How much should each town pay, and each person in it?

7. If 15 men or 40 boys do a piece of work in 12 days, how many days would 10 men and 20 boys take to do a piece of work 7 times as great?

8. Define Interest and Discount. Show that the Interest and Discount on \$64.50 for 8 months at  $4\frac{1}{2}$  per cent. per annum, differ by \$.5625 nearly.

9. The breadth of a room is 14 ft.; the cost of papering the walls at \$.05 a square yard is \$4; and that of carpeting the room at \$.225 a square yard is \$5.60. Determine the height and length of the room.

10. It is observed that 20 men, all of equal strength, build a wall 15 feet high, 30 feet long, in 60 days, and 35 others, also of equal strength, build a wall 20 feet high, and 40 feet long, in 64 days; what is the ratio of the strength of the men of the two classes?

11. A person has 200 shares in a certain Railway, for which he gives \$100 per share. When they are paying \$2 per cent. he sells them all at \$46 per share, and invests the proceeds in City Debentures at 92, paying 6 per cent. Find the alteration in his income.

12. Explain the method of pointing in the Extraction of the cube root of decimals.

Find the square root of  $\frac{.00123}{.18}$  and the cube root of 423564.751.

### III.

1. Shew from first principles how to divide one fraction by another.

Prove that the fraction  $\frac{6+7}{7+8}$  is greater than  $\frac{6}{7}$  and less than  $\frac{7}{8}$ .

Simplify

$$\frac{1\frac{1}{4} - \frac{5}{12}}{1\frac{1}{4} + \frac{5}{12}} + \frac{7}{6} \text{ of } \frac{9 \times 5}{14 \times 3} - \frac{11\frac{1}{2}}{15}$$