$\therefore$ substituting this value of $AD$ for $AD$ in (1), we have
12 times $BC = 35$ min. $+ B.C.$
$\therefore$ 11 times $BC = 35$ min.,
or $BC = 35$ min. $\div 11 = 3\frac{2}{11}$ min.
$\therefore$ $AD = 35$ min. $+ 3\frac{2}{11}$ min.
$\therefore$ time required is $38\frac{2}{11}$ min. past 1 o'clock.

In connection with the above we give the following statement: Since the minute hand moves twelve times as fast as the hour hand, therefore in 12 minutes the minute hand gains 11 minute spaces on the hour hand.

4. The hands of a clock are together at 12, when will they be together again?

The time must be after one; therefore the minute hand has 5′ to gain.

11 minute spaces gained in 12′;
$\therefore$ 1 minute space gained in $\frac{12}{11}$′;
$\therefore$ 5 minute spaces gained in $\frac{12 \times 5'}{11}$;
$\therefore$ time required is $5\frac{5}{11}$′ past 1.

5. After paying an income tax of \$10 on a \$100, a person has \$2700 a year. What was his entire income?

10 on a 100 $= \frac{1}{10}$ on a unit;
$\therefore$ $\frac{9}{10}$ of every unit of income left;
$\therefore$ $\frac{9}{10} =$ \$2700;
$\therefore$ $\frac{1}{10} =$ \$300;
$\therefore$ 1, or whole income $=$ \$300 $\times$ 10 $=$ \$3000.

6. A stock of provisions will serve 75 men for 30 days. How many men must leave in order that the stock may hold out 45 days for those left?

Provisions last 30 days for 75 men;
$\therefore$ " " 1 day for $75 \times 30$ men;
$\therefore$ " " 45 days for $\frac{75 \times 30}{45}$ men, or 50 men.

Hence the number of men who must leave $= 75 - 50 = 25$.

Exercise LVI., &c., furnish examples