

has fewest by 10 for each decimal place it is short, *e.g.*, in ex. 15 the numerator has four and the denominator six decimal places. Therefore, in erasing the decimals, the numerator must be multiplied by 100.

$$\frac{.5 \times 8.1 \times 7.7}{.11 \times 5.5 \times 6.3} = \frac{5 \times 81 \times 77 \times 10}{11 \times 55 \times 63} = \frac{90}{11}$$

VII. Proportion.—Read and review the work in Manual, Book II., p. 7, **XIV., XV.**

The problems in this exercise are to be solved both by analysis and by proportion. As soon as pupils can solve examples readily by analysis or method of unity, show how the intermediate step can be dropped by establishing at once a proportion. Begin with simple mental examples, *e.g.*, if 4 oranges cost 12 cents, what will 1 orange cost? 3 oranges? 5 oranges? 7 oranges? Pupils must answer giving a proportion only, as $\frac{1}{4}$ of 12 cents, $\frac{3}{4}$ of 12 cents, $\frac{5}{4}$ of 12 cents, $\frac{7}{4}$ of 12 cents. From simple examples of this kind derive the following principles:—

(a) That in a simple proportion three numbers or quantities are given to find a fourth.

(b) That we first select that quantity which is of the same kind as the answer required.

(c) That we arrange the two other numbers as a fraction.

(d) That if, from the nature of the question, the answer will be greater than the like quantity given, the fraction will be improper; if less, the fraction will be proper.

1. If $1\frac{3}{4}$ bushels of potatoes last a family 2 weeks, how long will $5\frac{1}{2}$ bushels last?

By Analysis.

$1\frac{3}{4}$ bushels last 2 weeks.

1 bushel lasts $\frac{2}{1\frac{3}{4}}$ weeks.

$5\frac{1}{2}$ bushels last $\frac{2 \times 5\frac{1}{2}}{1\frac{3}{4}}$ weeks.