

EXAMINATION PAPERS.

DECEMBER EXAMINATIONS, 1878.

SECOND CLASS TEACHERS AND INTERMEDIATE.

1. Show that $\frac{3}{4}$ of 1 = $\frac{1}{4}$ of 4.

Simplify

$$\left\{ \frac{1}{2} \left(\frac{4\frac{1}{2} \text{ of } 6\frac{3}{4}}{7\frac{1}{4}} \right) + \frac{8\frac{1}{2} + 2\frac{1}{2}}{8\frac{1}{2} - 3\frac{1}{2}} \right\} \text{ of } £182 \text{ 7s. 5d.}$$

2. Prove the principle on which the rule for finding the G. C. M. of two quantities depends.

Find the G. C. M. of 169037 and 66429, and the L. C. M. of 44, 48, 52, 96.

Define Ratio. Show how to find a fourth proportional to three given numbers.

A grocer has 224 lbs. of a mixture of chicory and coffee, the chicory being to the coffee as 1 : 6; what amount of chicory must be added to make the ratio 1 : 5?

4. A cistern (no lid) whose floor and walls are an inch and a-half thick, is 5 ft. 3 in. long, 3 ft. 7 in. wide, and 2 ft. 5½ in. high, in *external dimensions*; find the cost of painting the internal surface at 90 cents per square yard.

5. Perform the following operations:— 053407×047126 to six places of decimals; and $2569141797 \div 75284$ to five places of decimals. (Ten marks to be allowed if done by the *contracted* method; 6 marks for correct answer obtained in any other way.)

6. A note for \$730, drawn at 90 days and bearing interest at 8 per cent. per annum, is discounted by a broker 45 days before maturity; what must the broker pay for the note in order to realize 10 per cent. for his money? (No days grace).

7. A discount (true discount) of \$4 was allowed on a bill of \$52 that had 8 months to run, and at the same rate a discount of \$5 was allowed on a bill of \$75; how long had the latter bill to run?

8. A grocer mixed coffee at 28 cents a pound with some of a better kind at 42 cents a pound, and by selling the mixture at 35 cents a pound he gained 15 per cent. on the former and 20 per cent. on the latter; in what proportion did he mix them?

9. A vat 4 ft. long, 3 ft. wide and 9 inches deep contains pulp for making paper; a percentage of the pulp is lost in drying, and a sheet of paper 2700 yards long, 2 ft. 6 in. wide and .004 of an inch thick, is obtained: what per cent. of the pulp was lost in drying?

10. Find the area of a trapezoid whose parallel sides are 27.5 and 38.5 chains respectively, and whose other sides are 12.5 and 15.5 chains respectively.