University of the State of New York

Examination Department

146TH EXAMINATION

ARITHMETIC

Tuesday, June 15, 1897 — 9:15 a. m. to 12:15 p. m., only

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100 *credits, necessary to pass,* 75

Answer questions 1–5 and five of the others but **no more.** *If more than five of these other questions are answered only the first five of these answers will be considered. Give all operations (except mental ones) necessary to find results. Reduce each result to its simplest form and mark it Ans. Each complete answer will receive 10 credits.*

1 Define *product, cancelation, reciprocal, interest, antecedent.*

2 Simplify $\dfrac{17\frac{5}{12} - 9\frac{3}{4} + 4\frac{5}{7}}{\frac{5}{9} \times 9\frac{2}{7}}$

3 Find the weight in kilograms of the water which fills a rectangular cistern 2.15 meters long, 18.6 decimeters wide and 73 centimeters deep.

4 Find the amount of $4356.80 at $5\frac{1}{2}\%$ simple interest from January 1, 1897 to the present time.

5 If 10% is lost by selling cloth at 28 cents a yard, for what must it be sold to gain 20%?

6 A can do a piece of work in 10 days; A and B together can do the same work in 7 days; in how many days can B working alone do the work?

7 Make a receipted bill of the following: James Stewart bought this day of Jones & Robinson 85 lbs. coffee at 25 cents, 36 lbs. tea at 65 cents, 63 gallons molasses at $37\frac{1}{2}$ cents, 125 lbs. rice at $8\frac{1}{3}$ cents, 56 lbs. soap at $6\frac{1}{4}$ cents.

8 Find the cost at $17.50 a 1000 feet board measure of 35 3-inch planks each 22 feet long and 16 inches wide.

9 Find the number of shares of stock at $30\frac{3}{8}\%$ discount that can be bought for $2650.50, brokerage $\frac{1}{8}\%$.

10 A note for $368, drawn for three months without interest, is discounted at a bank at 6%; find the proceeds.

11 A farmer who owns $356\frac{1}{2}$ acres of land sells $\frac{1}{4}$ of it to one man and $\frac{2}{5}$ of it to another; what is the value of the remainder at $40 an acre?

12 Find the square root of 2 correct to *five* decimal places.

13 The signal service reports that $3\frac{1}{2}$ inches of rain fell in 24 hours; how many gallons of water fell on an acre of ground?

14 How many cubic feet of stone are required to build a wall 2 feet thick and 6 feet high about a rectangular cellar whose interior dimensions are 20 feet by 16 feet?

15 A horse tethered to a post by a rope 40 feet long can reach 2 feet beyond the end of the rope; over how many square feet of ground can the horse graze?