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University of the State of New York

Examination Department

119th examination

ARITHMETIC

Tuesday, March 13, 1894—9:15 a. m. to 12:15 p. m., only

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<center>100 *credits, necessary to pass,* 75</center>

Answer questions 1–5 and five of the others but **no more.** *If more than five of these 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 Express in words: 10010.0010, 4268.5, 185.851. Write in Roman notation 1894, 10486.

2 Reduce to its simplest form $\dfrac{\frac{2}{3}\times\frac{4}{9}-\frac{3}{5}\times\frac{1}{7}}{4\frac{1}{4}-1\frac{2}{3}+2\frac{1}{3}}$.

3 A cistern which contains 81000 liters is 5 meters long and 3.6 meters wide. Find its depth.

4 What principal loaned for 1 year and 3 months at 6% simple interest will amount to $1000?

5 A bank note for $500 at 3 months without interest dated Feb. 15, 1894 is discounted March 13, 1894. Find the proceeds.

6 I invest $6000 in 6% bonds at 125. What rate per cent do I receive on the investment and what is the income from it?

7 On a bill of goods amounting to $485.50 I receive commercial discounts of 15%, 10% and 5%. Find the net cost of the goods.

8 Hats which cost $30 a dozen are retailed at $3.50 apiece. Find the rate per cent profit.

9 A field is 42 rods long and 35 rods wide. Find its value at $37.50 an acre.

10 Within a rectangular court which is 50 ft long and 40 ft wide, walks four feet wide are laid as follows: one surrounding the court, two crossing it from the middle points of opposite sides. Find the cost of the walks at 25 cents a square foot.

11 A person starts from a certain point and travels at the rate of 29 miles in 6 hours. $2\frac{1}{2}$ hours later a second person starts from the same point and travels in the same direction at the rate of $32\frac{1}{2}$ miles in 5 hours. In how long a time and at what distance from the starting point will the second overtake the first?

12 A man 6 feet high casts a shadow 42 inches long. Find the hight of a flag staff which at the same time casts a shadow 28 feet long.

13 Find the cost of 6 pieces of timber each of which is 32 ft long, 10 in. wide, 8 in. thick, at $14 a thousand feet, board measure.

14 Define *common denominator, least common multiple, ratio, complex fraction, root.*

15 Find the cost in United States money of a bill of exchange on London for £12 15s 9d, exchange being at $4.86.