

University of the State of New York
Examination Department

117th examination

ARITHMETIC

Tuesday, November 28, 1893 — 9:15 a. m. to 12:15 p. m., only

100 credits, necessary to pass, 75

Answer the first five questions and any 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. Each complete answer will receive 10 credits. Give all operations (except mental ones) necessary to find results. Reduce each result to its simplest form and mark it Ans.

1 Find the amount of \$372.47 for 1 year, 7 months and 11 days, at $5\frac{1}{2}\%$ simple interest.

2 Find the cost of excavating a cellar 10 meters 5 decimeters long, 6 meters 2 decimeters wide and 25 decimeters deep, at 20 cents a cubic meter.

3 Reduce to its lowest terms $\frac{(1\frac{2}{3} + 1\frac{3}{4}) \times 3}{\frac{7}{8} \times 2\frac{1}{2} - \frac{4}{5} \div \frac{3}{7}}$.

4 Multiply three and 15 thousandths by one and five thousandths. Divide the product by five millionths and express the result in words.

5 I buy 240 barrels of potatoes at \$2.50 a barrel. I lose 40 barrels and sell the remainder so as to gain 15% by the transaction. At what price per barrel do I sell them?

6 Define *multiple, factor, power, numerator, ratio.*

7 Define *divisor, root, proportion, fraction.*

8 Reduce $\frac{41871}{111656}$ to its lowest terms and express the result as a decimal.

9 A, who travels at the rate of 7 miles in 2 hours, starts on a journey $1\frac{1}{2}$ hours before B who goes 14 miles in 3 hours. How far will A travel before he is overtaken by B?

10 On a bill of goods amounting to \$845 I can get 60 days credit or 5% off for cash. How much will I gain by borrowing the money on my note with interest at a New York bank and paying for the goods?

11 A cistern is 6 ft square; how deep must it be to hold 30 barrels of water?

12 I buy a plot of land at \$250 an acre. I divide it into building lots 66 ft x 99 ft and sell these lots at \$400 each. Find the gain per cent.

13 A square bin 3 ft deep contains 100 bushels; find the length of its side. (2150.42 cubic inches = 1 bushel.)

14 I retail oranges at 3 cents each, gaining 150% on the purchase price. What did the oranges cost a dozen?

15 How much lumber 1 in. thick will it take to make a box with cover, whose inside measurements are 4 ft x 3 ft x 2 ft?