

Examination Department

142D EXAMINATION

ARITHMETIC

Tuesday, January 26, 1897—9:15 a. m. to 12:15 p. m., only

100 credits, necessary to pass, 75

Answer the first five questions 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 Write in arabic notation four hundred eight and eight ten-thousandths, sixty three ten-millionths. Express in words 401.0401, $48.32\frac{1}{3}$. Write in roman notation 144.

2 Simplify $\frac{\left(\frac{3}{5} + \frac{2}{7}\right) \times \left(\frac{2}{3} - \frac{1}{4}\right)}{2\frac{1}{2} \times \frac{7}{8} + 4\frac{1}{3} - 2}$

3 A and B hire a pasture 80 rods long and 48 rods wide paying \$2 an acre for the season. A puts in 4 head of cattle for 5 months and B 7 head for 4 months. How much should each man pay?

4 Find the amount of \$585 at simple interest for 1 year, 5 months, 17 days at $5\frac{1}{2}\%$.

5 A rectangular cistern is 4 meters long, 3 meters wide, $2\frac{1}{2}$ meters deep; find its capacity in hectoliters and the weight in kilograms of the water which it will hold.

6 Bought hats at \$27 a dozen and sold them at \$3.75 each; find the gain per cent.

7 William Snow bought this day of John West for cash the following: 4 lbs. tea at 45 cents, 2 lbs. coffee at 40 cents, 2 bushels potatoes at 50 cents, 25 lbs. sugar at 5 cents. Make a receipted bill.

8 Find the rate per cent of income on an investment in 4% bonds bought at 110.

9 Find the cost at \$6 a thousand of shingles laid 5 inches to the weather to cover a roof of 1680 square feet.

10 Find the cost of the following bill of lumber:

20 pieces 13' x 6" x 10" at \$14 a thousand

10 " 16' x 2" x 4" at 16 "

6 " 24' x 8" x 10" at 15 "

- 11 Bought 1864 lbs. of hay at \$12 a ton and sold it at 80 cents a hundredweight; find the whole gain and the gain per cent.
- 12 Find the depth of a cylindric half-bushel measure whose diameter is 13 inches (1 bushel = 2150.42 cubic inches).
- 13 A house worth \$4500 is insured for $\frac{2}{3}$ of its value at the rate of one fourth of 1% per annum; repairs cost \$50 and taxes \$42.50 a year. What must be the rent per month to realize 6% on the investment?
- 14 Separate 745.29 into two equal factors. Give all the work.
- 15 Indicate by signs the following: the sum of 12 and 4 is multiplied by the difference between 7 and 5, this product is divided by 8 times the quotient of 9 by 3, and this final result is subtracted from the square root of 40000.