

Examination Department

143D EXAMINATION

ARITHMETIC

Tuesday, March 23, 1897—9:15 a. m. to 12:15 p. m., only

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 *subtrahend*, *least common multiple*, *evolution*, *percentage*, *present worth*.

2 Simplify the following: $\frac{1}{5} \times 2\frac{1}{4} \div \frac{\frac{3}{5} + \frac{1}{3}}{\frac{1}{2} + \frac{3}{8}} - \frac{1\frac{6}{5} - 2\frac{1}{2}}$

3 A tank is 6.3 meters long, 35 decimeters wide and 420 centimeters deep; if a stream of water flows into the tank at the rate of 3.6 liters a minute, in how many minutes will it be filled?

4 Find the amount at $4\frac{1}{2}\%$ simple interest of \$537.15 for 2 years, 7 months, 21 days.

5 Received 6% dividend on stock bought at 25% below par; what rate of interest did the investment pay?

6 Find the greatest common divisor and the least common multiple of 492, 744, 1044.

7 Find the cost of the following:

78 boards $13' \times 16'' \times \frac{7}{8}''$ at \$16.50 a 1000 feet

18 joists $10' \times 4'' \times 3''$ at \$13.75 a 1000 feet

8 On February 3, 1897, Philip Davis bought of William Richmond of Albany $16\frac{1}{4}$ yards sheeting at 22 cents a yard, $7\frac{1}{2}$ yards flannel at $62\frac{1}{2}$ cents a yard, $\frac{1}{2}$ dozen handkerchiefs at $37\frac{1}{2}$ cents each and $2\frac{3}{4}$ yards drilling at $15\frac{1}{2}$ cents a yard; the bill is paid to-day. Make out the receipted bill in proper form.

9 A house was sold for \$7050 at a loss of 6%; for what price should it have been sold in order to gain 15%?

10 Find the present worth of a note for \$1753.50 payable in 7 months, interest being computed at $5\frac{1}{2}\%$.

11 A can dig a ditch in 6 days, B in 8 days and C in 12 days; how long will it take them to do the work if all work together?

12 At what price must 5% bonds be bought so as to realize $7\frac{1}{2}\%$ on the investment?

13 How many gallons of water must be drawn from a reservoir $30\frac{1}{2}$ feet long and $20\frac{3}{4}$ feet wide in order to lower the surface 8 inches?

14 Find the square root of 3286.9835 to two decimal places.

15 If 27 men working 10 hours a day can build a wall in 14 days, how many hours a day must 12 men work to build the wall in 45 days? (Solve by proportion.)