## Examinations Department

105th examination

## ARITHMETIC

Tuesday, November 22, 1892 - 9: 15 a. m. to 12: 15 p. m., only

48 credits, necessary to pass, 36

Note.—Give all operations (except mental ones) necessary to find results. Reduce each result to its simplest form and mark it Ans.

I Define multiple, divisor, ratio, decimal fraction. Give an illustration of each.

2 Indicate the following operations by signs in one connected expression: The sum of 3 and 4 multiplied by the difference between 9 and 5, and the product divided by 2 times 7. Perform the operations indicated.

3 Write a complex fraction. State the reasons for regarding this fraction as complex. Reduce it to a simple fraction and this result to a decimal.

4 Reduce  $\frac{4004}{5236}$  to its lowest terms.

5 Bought 15786 lbs. of hay at \$12 per ton and sold it at \$14 per ton; find the whole gain and the gain per cent.

3

6 A field 10 chains 50 links long and 8 chains 40 links wide, produces 40 bushels of oats per acre; what is the value of the crop at 35 cents a bushel?

7 If 21 brick are used in one cubic foot of masonry, how many brick will be needed for a wall 60 ft. long, 1 ft. 6 in. thick and 18 ft. 8 in. high? What will the brick cost at \$7 per M? (Solve by cancellation.) 5

8 Find the amount of \$945.15 from December 15, 1891, to Novem-

ber 22, 1892, at 4½% simple interest.

9 If 4 men in 9 days can dig a trench 36 rods long, 2 ft. wide and 3 ft. deep, how many men will it take to dig a trench 90 rods long, 3 ft. wide and 4 ft. deep in 15 days? (Solve by proportion.)

To The sides of a rectangle are 8 ft. and 10 ft.; find its diagonal correct to 3 places of decimals.

11 A note for \$560 payable in 90 days is discounted at a bank 30 days after it is dated; find the proceeds.

12 How many liters of water will be contained in a vessel whose base is 1 meter square and whose depth is 6 decimeters?