High School Department

166TH EXAMINATION
ARITHMETIC

Thursday, September 27, 1900 — 9.15 a. m. to 12.15 p. m., only

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Answer the first five questions and five of the others but **no more.**
*If more than five of the others are answered only the first five 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. Papers entitled to
75 or more credits will be accepted.*

1 Define *five* of the following: *ratio, insurance, discount,
brokerage, cancelation, prime number, power.*

2 Simplify $1 \div \dfrac{3\frac{1}{2} - 2 \times \frac{2}{8} + 1}{.125 \div .005 - 12\frac{1}{8}}$

3 The weight of a column of water whose base is 6 centi-
meters square is $1\frac{4}{5}$ kilograms; find the hight of the column.
How many liters are there in the column?

4 From November 29, 1899 till the present date $450 has
gained $14.90 interest; find the rate of interest.

5 Oil is sold at the rate of $28\frac{1}{2}$ cents a gallon at a loss of 5%;
find the cost per pint.

6 How many shares of stock at 4% discount can be bought
for $3076, if the broker charges $\frac{1}{8}$%?

7 The proceeds of a note for 3 months discounted at a bank
at 4% is $354; find the face of the note.

8 Find the cost of 18 planks, 16 feet 8 inches long, 14 inches
wide and $2\frac{1}{2}$ inches thick, at $24 per M.

9 What will it cost to carpet, in the most economical way, a
room 36 feet by 20 feet, with matting 27 inches wide, at 45 cents
a yard?

10 A commission merchant received $451 to invest in flour;
after taking out his commission of $2\frac{1}{2}$% how many barrels of
flour did he buy at $5.50 a barrel?

11 A man sold two horses for $124 each, on one he gained
20% and on the other he lost 20%; find the whole gain or loss.

12 Find the contents in gallons of a cylindric cistern that
is 4 feet in diameter and 5 feet high. [1 gallon = 231 cubic
inches.]

13 It takes A three fourths as long to do a piece of work as
it does B, it takes B twice as long as it does C; if C can do
the work in 3 days, how long will it take A, B and C working
together?

14 Find the cost of plastering the walls and ceiling of a
room 16 feet by 9 feet and 12 feet high, at 38 cents a square
yard, making an allowance of $\frac{1}{6}$ for openings.

15 Find a mean proportional between 867 and 48, and write
the proportion.