High School Department

161ST EXAMINATION

ARITHMETIC

Tuesday, September 26, 1899—9.15 a. m. to 12.15 p. m., only

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 Simplify $(\frac{1}{8} + \frac{1}{4} \times \frac{2}{3}) \div (\frac{1}{6} + \frac{5}{7} \times \frac{3}{5}) - (.59 + \frac{1}{9}\frac{7}{0})$

2 Find the weight in kilograms of a rectangular piece of cast-iron 53 centimeters long, 45 centimeters wide and 38 centimeters thick. [Cast-iron is 7.2 times as heavy as water.]

3 A note for $587 at 4½% simple interest was given Jan. 30, 1899; find the amount of this note to-day.

4 Bought 10 pieces of cloth containing 35 yards each for $28, and sold them at retail at 12½ cents a yard; find the whole gain and the gain per cent.

5 At what price must I buy 5 per cent bonds in order to get 4 per cent on my investment?

6 Find the greatest common divisor and the least common multiple of 1260, 2310 and 7350.

7 Henry Wilson bought goods of Samuel White as follows: Aug. 1, 1899, 2 barrels flour at $6.50, pair shoes $3.50, 5 lbs. tea at 40 cents; Aug. 16, 50 lbs. sugar at 6 cents, 10 lbs. bacon at 10 cents. Make a receipted bill in proper form.

8 Find the cost of the following bill of lumber:

10 pieces hemlock	10′×3″×4′	at $16 a 1000 feet
25 " "	12′×8″×1′	at 16 a 1000 feet
20 " pine	16′×8″×1′	at 30 a 1000 feet

9 If it costs $17.75 to dig a cellar 20 feet long, 16 feet wide and 5 feet deep, how much will it cost to dig a cellar 24 feet long, 20 feet wide and 4 feet deep?

10 A man sells 2 horses for $100 each; on one he gains 25% and on the other he loses 20%. Did he gain or lose on both, and how much?

11 Find the contents in bushels of a bin 8 feet long, 4 feet wide and 6 feet high. [1 bushel = 2150.42 cubic inches.]

12 Find the number of square yards of plastering in the four walls and ceiling of a room 15 feet long, 12 feet wide and 9 feet high, allowing 10% for openings.

13 At 3½ bushels an acre how many bushels of seed oats will be required for a field 660 feet long and 462 feet wide?

14 Find the square root of 3712.4 to *two* decimal places.

15 How much water will flow in 1 hour from a pipe 8 centimeters in diameter if it flows at a velocity of 10 meters a second?