

193D HIGH SCHOOL EXAMINATION

ADVANCED ARITHMETIC

Wednesday, September 25, 1907 — 9.15 a. m. to 12.15 p. m., only

Answer eight questions. 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 State a principle by which, without reducing the fraction to a decimal, you can determine (a) whether it will give a finite or a circulating decimal, (b) whether it will give a pure or mixed circulating decimal, (c) the number of places in the finite part of a mixed circulating decimal. Illustrate each principle.

2 A owns $\frac{2}{3}$ of a farm and B owns the remainder; A owns 18 acres $75\frac{1}{2}$ square rods more than B. Find the number of acres in each man's share. Write full analysis.

3 Find the cost, @ \$12.50 per M, of 24 planks 18' long 18' wide at one end and 14' wide at the other, and $3\frac{1}{2}$ ' thick.

4 A man gained 40% on $\frac{1}{3}$ of an investment and lost 16% on the remainder; his net gain was \$655.50. Had he gained 40% on $\frac{2}{3}$ of the investment and lost 16% on the remainder, what would have been his net gain?

5 If \$240 at 6% earns \$22.56 in 1 yr. 6 mo. 24 da., what sum will \$180 at $4\frac{1}{2}$ % earn in 1 yr. 3 mo. 6 da.? Solve by proportion.

6 A cylindrical tank 7' in diameter is filled to the depth of 6' 4" with oil; find the weight of the oil if 1 cubic foot of water weighs 62 $\frac{1}{2}$ pounds and the specific gravity of the oil is .97.

7 A, wishing to raise \$1000, has his 90 day note for \$950 discounted at a bank at 6% and borrows the rest from B. Find the amount that he borrowed.

8 An agent received a commission of 3% for selling goods and invested the proceeds of the sale after deducting his purchase commission of 2%. His whole commission was \$265; find the selling price of the goods.

9 A ladder 51' long stands close against the side of a building; how many feet must it be drawn out at the bottom that the top may be lowered 6'?

10 Find the present worth of a debt for \$742.73 due in 5 months 18 days when money is worth 6%.

11 Find in marks the face of a bill on Berlin, bought for \$5000, exchange being quoted at 93 $\frac{3}{4}$.

12 The side of a square is 4'; find the side of a square whose area is 3 times as great.