194TH HIGH SCHOOL EXAMINATION

INTERMEDIATE ALGEBRA

Monday, January 27, 1908—9.15 a. m. to 12.15 p. m., only

Answer eight questions, selecting at least two from each group. Give all operations (except mental ones) necessary to find results. Reduce each result to its simplest form and mark it Ans.

Group I 1 Interpret *each* of the following: $\frac{a}{0}$, $\frac{0}{a}$, $\frac{0}{0}$

2 Explain the meaning of a negative integral exponent; of a fractional exponent.

3 Find the square root of $29+4\sqrt{7}$

4 Solve $3\sqrt{x}-\sqrt{x+12}=\frac{8}{\sqrt{x+12}}$

Group II 5 Solve as a quadratic $\sqrt{x+14}-\sqrt[4]{x+14}=2$

6 Find a mean proportional between $\frac{x^2-x-6}{x+4}$ and $\frac{x^2+x-12}{x+2}$

7 Two numbers are in the ratio of 7 to 9, but if 14 is added to each they will be in the ratio of 5 to 6; find the numbers.

8 If 175 apples lie in a straight line at intervals of 10 feet, find the distance a boy will travel to gather the apples, assuming that he starts from the first and makes a separate journey for each of the others.

Group III 9 Determine graphically the values of x and y in

$$\begin{cases} 8x-3y=-6 \\ 4x+6y=7 \end{cases}$$

10 Prove that in arithmetic progression $S=\frac{n}{2}(a+l)$

11 Simplify *each* of the following: $3\sqrt{-20}-3\sqrt{-45}+\sqrt{-80}$; $\sqrt{63}+(-\sqrt{-7})$; $\sqrt{-6}\times\sqrt{-24}$

12 Solve $\begin{cases} x^3-y^3=19 \\ x^2y-xy^2=6 \end{cases}$