*New York State Education Department*

209TH HIGH SCHOOL EXAMINATION

# ELEMENTARY ALGEBRA

**Monday, June 16, 1913—9.15 a. m. to 12.15 p. m., only**

---

Write at top of first page of answer paper (*a*) name of school where you have studied, (*b*) number of weeks and recitations a week in elementary algebra. The minimum time requirement is five recitations a week for a school year.

*Answer the first six questions and two of the others. Credit will not be granted unless all operations (except mental ones) necessary to find results are given; simply indicating the operations is not sufficient. Each answer should be reduced to its simplest form.*

1 Solve and check or prove $\frac{x}{3}-\frac{x-3}{3}=12-\frac{x+4}{2}-x$

2 Extract the square root of $4c^4-4c^3+5c^2-2c+1$

3 Solve $\begin{cases} x+2y=a \\ 2x-\ y=b \end{cases}$

4 Simplify $\sqrt{\frac{3}{4}}+\sqrt{\frac{1}{3}}$; $(\sqrt{5}-\sqrt{2})(2\sqrt{5}+3\sqrt{2})$

5 In five years A will be twice as old as B; five years ago A was three times as old as B. Find the age of each at the present time.

6 Find the quotient to *three* terms and the remainder when $11a^3-5a+12-82a^2+30a^4$ is divided by $2a-4+3a^2$

[No partial credit will be granted on the answer to this question.]

7 *a* What is the dividend which, divided by $x$, gives a quotient of $y$ and a remainder of $z$?

*b* If $a$ apples are sold for a dime, how many can be bought for $c$ cents?

8 Two men, A and B, can dig a trench in 20 days; it would take A 9 days longer to dig it alone than it would B. How long would it take B alone?

9 Find *three* successive *even* numbers whose sum is $\frac{3}{8}$ of the product of the first two.

10 Simplify $\dfrac{x^2-\frac{1}{x}}{x+\frac{1}{x}+1}$

[No partial credit will be granted on the answer to this question.]