University of the State of New York

Examinations Department

79th examination

ALGEBRA

Wednesday, Jan. 27, 1892—9 : 15 a. m. to 12 : 15 p. m., only

48 *credits, necessary to pass,* 36

1. Define polynomial, elimination, simultaneous equations, radical quantity. 4

2. Remove the parenthesis and simplify the following:

$3x-4\,(2x+y)+3x^2$. 3

3. Simplify $\left(\frac{a-1}{a}+\frac{b-1}{b}+\frac{c-1}{c}\right) \div \left(\frac{1}{a}+\frac{1}{b}+\frac{1}{c}\right)$. 4

4. Name three methods of elimination and describe the process of one of them. 4

5. Solve $\frac{3}{x}+\frac{2}{y}=2\frac{1}{6}$; $\frac{1}{x}+\frac{4}{y}=1\frac{5}{6}$. 4

6. Solve $\frac{x}{3}+\frac{3}{x}+5=7\frac{1}{2}$. 4

7. The sum of two numbers multiplied by the greater is 28, and the same sum multiplied by the less is 21; what are the numbers? 3

8. Solve $\sqrt{x-3}+\sqrt{x+4}=7$. 4

9. Simplify $\frac{4\sqrt{27}-\sqrt{48}}{3\sqrt{3}}$. 4

10. Expand by the binomial formula $(a^3-2b^2)^6$. 3

11. Find the least common multiple and the greatest common divisor of x^2-1, x^2+x-2, x^2+2x-3. 4

12. Find the cube root of $54a^2b^2-36a^4b+8a^6-27b^3$. 3

13. Divide a into three parts so that m times the first part shall equal n times the second and r times the second, s times the third. 4