# University of the State of New York. 

## 32nd Advanced Academic Examination. <br> ALGEBIRA.

(Through Quadratics.)
Monday, November 19, 1888-Time,9:30 A. M. to 12:30 P. M. only.

## 40 credits, necessary to pass, 30.

1. Write the fraction which has for the numerator, the square root of $x$ plus the cube root of $y$, multiplied by $m$ fifth power increased by six times $x$ square $y$ cube ; and the denominator, the cube root of $m$ plus the fifth root of $n$ mu!tiplied by the binominal $y$ cube plus $x$ square 3
2. Simplify $3(x+a)(y+b)-\{-m[c-(d-g)]\} \ldots .2$
3. Explain and illustrate by examples, the treatment of a minus sign of a subtrabend, and of minus into minus in multiplication. 4
4. Multiply $a-b+c$, by $a+b-c$, and find the value of the product when $a=9, \quad b=4, \quad c=3$2

5 Expand $(1+c)(1+c)(1-c)\left(1+c^{2}\right) \ldots \ldots \ldots \ldots \ldots$.
6. The dividend is $x^{: n}+x^{2 n} y^{n}+y^{n}$; the quotient is $x^{3 n}$ $x^{n} y^{n}+y^{n}$; what is the divisor?2
7. Is $m^{\prime 1}+x^{4}$ divisible by $m+x$; by $m-x$ ? ................ 4

9. Simplify $\frac{1+x}{1+x+x^{2}}-\frac{1-x}{1-x-x^{2}}$
10. What is the rule for transposing a term from one member of an equation to the other? What is the principle?............. 4
11. On a disabled steamer there were 343 persons; there were twice as many men as women, and twice as many women as children. All the children, $\frac{4}{7}$ of the women and $\frac{1}{4}$ of the men were saved. How many were saved?2
12. Solve, by comparison, $\left.\begin{array}{l}7 y-3 x=139 \\ 2 x+5 y=91\end{array}\right\} \ldots \ldots . . .$.
13. Solve $m x^{2}-1=\frac{x\left(m^{3}-n^{2}\right)}{m n} \ldots \ldots \ldots \ldots \ldots \ldots . .$.
14. The sum of the areas of two square fields is 1,300 square rods, and it requires 200 rods of fence to enclose both. What is the area of each field?

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