

205TH HIGH SCHOOL EXAMINATION

ELEMENTARY ALGEBRA

Monday, September 18, 1911—9.15 a. m. to 12.15 p. m., only

Answer the first six questions and two of the others. No credit will be allowed unless all operations (except mental ones) necessary to find results are given; simply indicating the operations is not sufficient. Each complete answer will receive $1\frac{1}{2}$ credits. Papers entitled to less than 75 credits will not be accepted.

1 Define the following: simultaneous equations, exponent, polynomial, equation, square root.

2 Find the value of F in terms of C in the following equation: $C = \frac{5}{6}(F - 32)$

3 Factor the following: $5 - 40x^3$; $a^2 + ab + ac + bc$; $1 - \frac{a^6}{25}$; $x^{2m} - 4x^m y^3 + 4y^6$

4 Rationalize the denominator of $\frac{9 - 2\sqrt{3}}{2 + \sqrt{3}}$ and find the value of the result to two decimal places.

5 Solve $\begin{cases} x + y + 2z = 9 \\ 2x + 3y + 3z = 17 \\ 3x + 2y + z = 10 \end{cases}$

6 Solve $\frac{9}{5 + \sqrt{x}} = \frac{4}{8 - \sqrt{x}}$

7 The sum of the two digits of a number is 5; if 9 is added to the number the order of the digits is reversed. Find the number.

8 A merchant sold a suit of clothes for \$24 and gained as much per cent as the suit cost him; find the gain per cent and the cost.

9 Divide 5 into two parts so that the sum of the parts shall be to their difference as 10 : 2.

10 Find to the fourth term the approximate square root of $1 + x$.