University of the State of New York

Examinations Department

111th examination
ADVANCED ARITHMETIC

Monday, June 12, 1893 — 9:15 a. m. to 12:15 p. m., only

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100 *credits, necessary to pass,* 75

NOTE—Give each step of solution, indicating the operations by appropriate signs. Use cancelation when possible. Reduce fractions to lowest terms. Express final result in its simplest form and mark it *Ans.*

1 Define *power, root, true discount, standard of measure, uniform scale.*

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2 Compare the standard units of money of the United States, England, France and Germany as to relative value. Find the value of $100 in each of the other units.

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3 A locomotive runs ¾ of a mile in ⅘ of a minute; at what rate an hour does it run? (Give analysis in full.)

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4 The base of a certain triangle is 40 feet, its altitude is 30 feet; find the area of a similar triangle whose base is 25 feet.

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5 The edges of a rectangular parallelopiped are in the proportion of 3, 4 and 6, its volume is 720 cubic inches; find its entire surface.

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6 Derive the rules for converting difference of longitude into difference of time and *vice versa*. Indicate the application of these rules in finding time or longitude.

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7 Derive a rule for marking goods so that a given reduction may be made from the marked price and a given profit still be made on the cost.

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8 Find the sixth root of 191102976 and explain the process.

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