

University of the State of New York

Examinations Department

Special examination

ARITHMETIC

48 credits, necessary to pass, 36

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

1. Define (*a*) concrete or denominate number; (*b*) minuend; (*c*) factor; (*d*) discount. Give an example of each. 8
2. By how much does the cube of fifty-three hundredths exceed one millionth? 4
3. What would it cost to dig a cellar 80 ft. \times 35 ft. \times 8 ft. at \$.84 per cubic yard? 3
4. Reduce 7 miles to kilometers. 2
5. If the shadow of a post 6 ft. high is 4 ft. 6 in. long, what is the height of a tree whose shadow at the same time is 125 ft. long? (Solve by analysis.) 3
6. Paid \$50 for a cask of molasses containing 120 gallons. One fifth of the molasses leaked out; for how much must the remainder be sold per gallon to gain 10% on the purchase? 4
7. The expenses of a charity concert were 40% of the receipts. The poor received \$250. What were the expenses? 3
8. What was the rate per cent of a tax of \$52.88 on property assessed at \$3525.50? 2
9. What is the premium on a building valued at \$3000, insured for two-thirds of its value, at $2\frac{3}{4}\%$? 2
10. A man borrows \$9675 at 6%, April 15, 1892, and buys flour at \$6.25 a barrel. He sells the flour May 24, 1892, at \$7.84 a barrel and pays the borrowed money, including interest. How much does he gain? 4
11. What are the present worth and the true discount of \$500 payable in 6 months, 15 days, at 6%? 2
12. Find the length of a diagonal of a square whose side is 19 ft. (Give the answer to two decimal places.) 3
13. How many bushels will a bin contain that is 9 ft. long, 4 ft. wide, 6 ft. deep? 2
14. A pension of \$140 per year is four years in arrears. Find the amount now due at 5% compound interest. 3
15. A owns $\frac{3}{11}$ of a farm worth \$15,422, and sells $\frac{2}{3}$ of his share. Find the value of what he has left. 3