



63d Preliminary Academic Examination.

First **ARITHMETIC** Session.

June 14, 1887. Time, 9:30 A. M. to 12 M., only.

 Numerical Answers are not generally sufficient. Give all computations (beyond simple mental ones) necessary to find the answer.

 Cancel whenever you can, reduce fractions to lowest terms, and mark each numerical answer, *Ans.*

80 credits, necessary to pass, 60.


1. Define and illustrate by example ; a concrete number, a prime number, a decimal fraction 6
2. Express in the Arabic notation the following : five hundred three million forty-four thousand three hundred ten ; seventy-five million thirteen ; five hundred thousand twenty-five 3
3. Express in words the following ; 8947023 ; 700245010 ; 25000001 3
4. Express in the Arabic notation DCCCLXXIX 1
5. Write the composite numbers between 2 and 25 1
6. The whole number of votes cast at an election was 2,120. One of the candidates received 938 more than the other. How many votes did each receive ? 3
7. Find the dividend when 25 is the divisor, 125 the quotient, and 13 the remainder 2
8. A grocer sold 25 boxes of soap, each containing 32 bars, at 15 cents a bar, and received in payment 8 tubs of butter, each containing 50 pounds. How much did the butter cost him a pound ? (Solve by cancellation.) 3
9. From a piece of cloth containing $47\frac{3}{4}$ yards, pieces were taken as follows : $6\frac{7}{8}$ yards, $10\frac{8}{9}$ yards, $\frac{5}{12}$ yard, $17\frac{1}{2}$ yards ; how many yards remained ? 2
10. Express in words the following : .16009 ; .000345 ; 255.02749 3
11. Express each of the following in the form of a common fraction or mixed number: .0027 ; 25.275 2
12. William Thomas buys of Theodore Dalton the following and gives his note in payment of the bill : 25 yards Brussels carpet at \$1.13 a yard ; 30 yards ingrain carpet at 45 cents a yard ; 40 yards stair carpet at $87\frac{1}{2}$ cents a yard. Make a receipted bill 5
13. Find in rods, feet, and inches the value of $\frac{7}{15}$ of a mile 2
14. What decimal part of a working day of ten hours is 2 hours and 40 minutes ? 2
15. If a ton of coal occupy 35 cubic feet how many tons will a bin 10 ft. long, 5 ft. wide and 5 ft. deep hold ? 2
16. If a locomotive run at the rate of 40 miles in 55 minutes, and its drive wheels are 18 feet in circumference, how many revolutions will a drive wheel make in one hour ? 3
17. Find the cost of carpeting a room 26 feet long, 13 feet 6 inches wide at $\$1.12\frac{1}{2}$ a yard, the carpet being 27 inches wide, the strips running lengthwise of the room and a loss of twelve inches for matching being allowed on each strip 3


University of the State of New York.

63d Preliminary Academic Examination.


Second **ARITHMETIC** Session.


June 15, 1887. Time, 9:30 A. M. to 12 M., only.

 Numerical answers are not generally sufficient. Give all computations (beyond simple mental ones) necessary to find the answer.

 Cancel whenever you can, reduce fractions to lowest terms, and mark each numerical answer, *Ans.*


18. Write the table of Dry Measure..... 2
19. Find the exact number of days from January 1, 1888 to May 15, 1888, including both dates mentioned..... 2
20. Define rate per cent., percentage, interest, bank discount, proportion, involution..... 6
21. A man agrees to pay \$550 a year rent for a house. At the end of 5 months with the consent of the proprietor he leaves the premises. How much should he pay? (Solve by proportion.) 3
22. If coal sells for cash at \$4.50 a ton in July and at \$5.75 in February, how much is saved in buying 10 tons in July, and what per cent. is saved?..... 4t
23. A building is insured in 5 companies for \$1,500 each. How much is the total premium at $\frac{3}{4}$ of one per cent?..... 2
24. If the real estate of Mr. A is assessed at \$10,000, his personal property at \$3,000, and he pays a poll tax of \$1, how much is his whole tax if the rate is 5 mills on the dollar?..... 2
25. A commission merchant sells 250 crates of grapes at \$2.80 a crate. If the commission is 3 per cent and the expressage is \$37.50 find the net proceeds..... 2
26. What sum must be invested at 5 per cent to produce an annual income of \$900?..... 1
27. In what time will \$100 amount to \$200 at 5 per cent?.. 1
28. A field is 50 rods long and 40 rods wide. How many rods less of fence will it require to enclose the same area in the form of a square?..... 3
29. Find one of the three equal factors of 1030.301..... 3
30. Find the altitude of a triangular piece of land having a base of 75 rods and an area of $22\frac{1}{2}$ acres..... 2
31. To what one of the metric measures is the quart most nearly equal..... 1


 Carefully read and obey the following directions:

 Do you now, at the close of this examination, conscientiously declare that you had no previous knowledge of the questions to be proposed, that you have neither given to any other scholar, nor received from any source, explanation or other aid in answering any of them. If so, write *in the next line after the end of your set of answers*, near the right side of the paper, the words

"I do SO declare."

and underneath *subscribe your name.*

 Every set of papers lacking this *full declaration and signature*, however satisfactory in other respects, will be rejected, on the presumption that the required declaration could not conscientiously be made.

 Fold your MS. in proper form for filing, and indorse the last leaf with the name of the institution, your own name, the subject, and the date of the examination.