University of the State of New York.

72d Preliminary Examination.

**ARITHMETIC.**

Tuesday, March 4, 1890—Time, 9:30 A. M. to 12:30 P. M., only.

100 credits, necessary to pass, 75.

1. In a number what is the effect upon the value of a figure if it be removed one place to the right?  What if removed one place to the left? ........................................ 4

2. Explain the difference between a prime number and a composite number ........................................ 4

3. When the divisor is 10, 100 or 1000, give the shortest method of division. Give an example. ........................................ 4

4. If 59 books cost $43.07 for how much must 23 of them be sold to gain $1.84 on those sold? ........................................ 4

5. If $16 \frac{3}{4}$ yards of ribbon at 12\frac{1}{2} cents a yard are made into badges $\frac{1}{2}$ of a yard long, and the badges are sold at 12\frac{1}{2} cents each, how much is gained? ........................................ 6

6. How much will 2 rods, 3 yds., 2 ft. of fence cost at $12 a rod? ........................................ 4

7. The circumference of one wheel of a bicycle is 55 inches, and of the other is 21 inches. The latter will revolve how many more times than the former in going 15 miles? ........................................ 6

8. William Thomas buys of Jacob Smith, March 1, 1890, giving his note for $50 and cash for the balance, 15 pairs boots at $4.25; 37 pairs slippers at $1.75; 2 dozen pairs slippers at $9 a dozen. Make a bill of the above and receipt it for Smith ........................................ 10

9. Find the amount of a note for $500 at 7% given Jan. 1, 1875, paid June 15, 1879 ........................................ 8

10. What sum at 3\frac{1}{2} per cent for six years will produce $28.87\frac{4}{4}$ simple interest? ........................................ 6

11. If $175 be gained by selling a house for $1425, how much per cent would be gained by selling it for $1600? ........................................ 6

12. What annual income will be produced by $13,000 invested in a 3\frac{1}{2}% stock at 91? ........................................ 4

13. Find the date of maturity and face of a note at 3 mos. at 5%, dated March 2, 1890, which, discounted at bank, will give as avails $888.125 ........................................ 6

14. An agent received $29.50 commission at 2\frac{1}{4} per cent for selling 120 barrels of flour. At how much a barrel did he sell it and how much did he pay the owner? ........................................ 6

15. A. and B. together, with a capital of $2000 gain $500. A. takes 2 of the gain. Find B.'s stock and share of gain ........................................ 4

16. A tax of $33,250 is to be raised on property valued at $950,000. Find the rate and A.'s tax on $15,370 ........................................ 6

17. Find in miles and hundredths the distance from one corner of a township 8 miles square to the diagonally opposite corner ........................................ 8

18. Give the name of the unit of capacity and the name of the unit of surface in the metric system ........................................ 4