ARITHMETIC

Tuesday, January 17, 1922—9.15 a. m. to 12.15 p. m., only

Write at top of first page of answer paper (a) name of school where you have studied, (b) grade of work completed in arithmetic.

The minimum requirement is the completion of the work of the seventh grade in arithmetic, as outlined in the 1910 syllabus for elementary schools.

Answer the first five questions and seven of the others. Reduce each result to its simplest form and mark each answer Ans.

Questions 1, 2, 3, 4 and 5 are given as tests for accuracy; no credit, therefore, will be allowed unless the answer is correct.

1 Mental test on separate sheet. [10]

2 Copy and add the following: [5]

469.25; .0379; 98.7; 32.567; 4.786; 7.8798; 3977.4832; 86.275; 654.96; 71.8

3 Multiply the sum of $\frac{2}{3}$ and $\frac{2}{3}$ by $\frac{7}{8}$, and divide the product by $1\frac{2}{3}$. [5]

4 Divide 651.021 by .3207. [5]

5 Find the fourth term in the following proportion:

147 : 378 :: 126 : ? [5]

6 Find the cost of 12 planks, each 3 inches thick, 16 feet long and 10 inches wide, at $85 per M. [10]

7 Find in gallons the capacity of a cylindric cistern 56 inches in diameter and 8 feet deep. [10]

8 A commission merchant sells 6240 pounds of cheese at $19\frac{1}{4}$ cents a pound; what sum should he remit to his principal if his commission is $2\frac{1}{2}$%? [10]

9 How much more does a table cost marked $16.50 with a discount of 20% than one marked $11.75 without discount? [10]

10 A man sells a piano for $550, receiving $150 in cash; he takes a 90 day note with interest at 6% for the balance. If the note is discounted immediately at a bank, what is the net amount received for the piano? [10]

11 A dairyman sold in one month 12,500 pounds of milk which contained 3.5% of butter fat; at 38 cents a pound for the butter fat, how much did the dairyman receive? [10]

12 How would you find the income from a certain number of $100 Victory bonds bearing $4\frac{3}{4}$% interest? [10]

13 A boy lives 30 rods south from a certain street corner; the schoolhouse is 40 rods west from the same corner. How much nearer is it for the boy to go diagonally to the schoolhouse than the longer way around the corner? [10]

14 A rug 5 yards long and $3\frac{1}{2}$ yards wide leaves an uncovered space $2\frac{1}{2}$ feet wide around a room; what is the floor area of the room in square feet? [10]

15 Copy and complete *five* of the following so as to make them correct statements: [10]

a The dividend divided by the divisor equals the —.

b One of the two equal factors of a number is called —.

c To change a common fraction to a decimal —.

d An expression of equality between two ratios is called —.

e One difference between a common fraction and a decimal fraction is —.

f The writing of numbers is called —.

g The amount paid periodically for insurance against loss is called —.

ARITHMETIC MENTAL TEST

[Fifteen minutes allowed for this test]

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Answer all parts of this test. Write each answer in the space marked Ans. No credit will be allowed unless the answer is correct.

a Add ½, ¼ and ⅛.   [1]

Ans.

b A baker sells 8 rolls for 10 cents; what is the price per dozen? [1]

Ans.

c At 40 cents a peck, how much will 2½ bushels of onions cost? [1]

Ans.

d The freight on a bicycle costing $30 was $2; at what price must the bicycle be sold to gain 37½%?   [1]

Ans.

e A man who works from 8 a. m. to 5 p. m., with one hour off at noon, is paid 60 cents an hour for the time he actually works; how much does he receive for his day's work? [1]

Ans.

f Separate 72 into two numbers having a ratio of 3:5.   [1]

Ans.

g Change .35 to a common fraction in its lowest terms. [1]

Ans.

h Find the simple interest on $800 for 2 years at 6%.   [1]

Ans.

i The 1910 census gave the population of a certain city as 10,000; the 1920 census gave the population of the same city as 30,000. What was the per cent of increase? [1]

Ans.

j How many square inches are there in ¾ of a square foot? [1]

Ans.