

ARITHMETIC

Tuesday, June 15, 1915—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 12 questions, including question 1, the four questions in group II and seven questions from group III. No credit will be allowed unless all operations (except mental ones) necessary to find results are given; simply indicating the operations is not sufficient. Reduce each result to its simplest form and mark each answer Ans.

Group I

- 1 Mental test on separate sheet. [10]

Group II

Answer the four questions in this group. No credit will be allowed for any one of the questions in this group if the result is incorrect. Five credits are assigned to each question.

- 2 Add

$$86721$$

$$45483$$

$$27918$$

$$38675$$

$$91586$$

$$59867$$

$$78231$$

$$87654$$

$$93142$$

$$64379$$

- 3 Find the sum of $1\frac{2}{3}$, $5\frac{1}{2}$, $\frac{4}{9}$ and $\frac{5}{12}$

- 4 From 3727.66 subtract 469.77 and multiply the remainder by 5.8

- 5 Divide 18305.1 by 38.7

Group III

Answer seven questions from this group. Ten credits are assigned to each question.

- 6 A merchant bought goods listed at \$1472 and was allowed successive discounts of $12\frac{1}{2}\%$ and 10% ; how much did he pay for the goods?

7 The frame of a hat cost $\$3\frac{3}{4}$; it was covered with $1\frac{1}{2}$ yards of velvet at $\$1.50$ a yard and the trimmings cost $\$4.50$. If the making cost $\$1.50$, what was the total cost of the hat?

8 At $\$30$ per M, find the cost of a plank $16\text{ ft} \times 8\text{ in.} \times 1\frac{1}{2}\text{ in.}$

9 A swimming tank is 40 feet long and 18 feet wide; how much will it cost to cement the bottom at $\$1.12\frac{1}{2}$ per square yard?

10 The freight rate from New York to San Francisco by rail is $\$2$ per 100 pounds; by way of the Panama canal route it is $\$1.12\frac{1}{2}$ per 100 pounds. What per cent of the cost by rail will be saved by shipping through the canal?

11 What is the cost per acre of plowing land, if one man with three horses plows 2 acres in 9 hours at the rate of 20 cents an hour for the man's time and 10 cents an hour for the time of each horse?

12 Which will be the more profitable for the owner of a house and by how much, to rent the house for $\$40$ a month, the taxes, insurance and repairs for the year amounting to $\$175$, or to sell it for $\$5000$ and to invest the money at $4\frac{1}{2}\%$?

13 How much will a man receive on a non interest bearing note for $\$4800$, due in 3 months, if he has it discounted at 5% the day it is made?

14 Make a *receipted* bill for the following goods sold by you on this date to A. B. Adams: 60 grape fruits at 55 cents a dozen; 3 pounds tea at $82\frac{1}{2}$ cents a pound; 4 dozen eggs at 23 cents a dozen; 8 pounds sugar at $6\frac{1}{2}$ cents a pound and 5 pounds bacon at 32 cents a pound.

15 If the ratio of the volume of water to ice is as 23 to 25, what space will be filled by the ice obtained by freezing 4531 cubic inches of water?

ARITHMETIC MENTAL TEST

[Ten minutes allowed for this question]

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Write the answer on the line marked Ans.

- 1
- a*
- Find the cost of 8 books at
- $37\frac{1}{2}$
- cents each. [2]

Ans. ~~370~~ 7

- b*
- Find the cost of
- $7\frac{1}{2}$
- gallons of milk at 9 cents a quart. [2]

Ans. \$12.70

- c*
- A boy buys newspapers at the rate of 2 for one cent and sells them for one cent each; what per cent does he gain? [2]

Ans. 50%

- d*
- If 8 pounds of sugar cost 64 cents, what will 16 pounds cost? [2]

Ans. 128

- e*
- A boy went to the store with a dollar bill and bought 2 loaves of bread at 10 cents each, 5 bars of soap at 5 cents each and
- $\frac{1}{2}$
- pound of coffee at 30 cents a pound; how much change should he have received? [2]

Ans. \$1.40