ARITHMETIC

Tuesday, January 17, 1928 — 9.15 a. m. to 12.15 p. m., only

Instructions

Do not open this sheet until the signal is given.

Answer all questions in part I and five questions from part II.

Part I is to be done first and the maximum time to be allowed for this part is one and one half hours.

If you finish part I before the signal to stop is given you may begin part II on another paper. However, it is advisable to look your work over carefully before proceeding to part II, since *no credit will be given any answer in part I which is not correct and reduced to its simplest form.*

When the signal to stop is given at the close of the one and one half hour period, work on part I must cease. The answer papers to part I will then be collected and you should continue with the remainder of the examination.

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Write at top of first page of answer paper to part I (*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 first half of the eighth grade in arithmetic.

Part I

Answer all questions in this part. Each question has 2 credits assigned to it. All work must be shown. Each answer must be reduced to its simplest form.

1 Add
$$146$$
$$238$$
$$5490$$
$$24$$
$$857$$
$$9031$$

2 Add 13.98; .067; 49.6; 1935; 64.2; 416

3 Find the sum of $30\frac{1}{3}$; $14\frac{3}{4}$; $18\frac{7}{12}$; $26\frac{5}{8}$

4 Subtract 758059 from 906387

5 From $161\frac{3}{4}$ take $67\frac{5}{8}$

6 *a* Multiply 27.42 by 30.8
   b Check the answer.

7 $4\frac{2}{3} \times 5\frac{1}{4} \times 2\frac{1}{4} = ?$

8 Divide $396\frac{2}{3}$ by 8

9 *a* Find the quotient of .05184 divided by 2.4
   b Check the answer.

10 Divide 6 by $3\frac{3}{8}$

11 $150^2 = ?$

12 The weights of the members of the winning crew in a college boat race were 184, 192, 178, 172, 186, 188, 168 and 202 pounds. What was the average weight of the crew?

13 A player piano that cost $960 was sold for $1080; what per cent of the cost was the gain?

14 Find (*a*) $12\frac{1}{2}\%$ of $560.32; (*b*) $\frac{1}{8}\%$ of $560.32

15 How much will a rug 9 feet wide and 12 feet long cost at $1.25 a square yard?

16 An electric toaster listed at $9.60 was sold at $16\frac{2}{3}\%$ off the list price; find the selling price.

17 Find the fourth term of the following proportion: $26:30 = 130: ?$

18 Find the circumference of a circular flower bed 12 feet in diameter.

19 Write in words: 50010.085

20 Two 10-gallon cans of milk were sold in a cafeteria in $\frac{1}{2}$-pint bottles; how many bottles were used?

21 Write the percentage equivalent of *each* of the following: $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{12}$, $\frac{1}{2}$

22 How many board feet are there in a piece of timber 12 feet long, 3 inches wide and 2 inches thick?

23 A man pays for rent $120 a month, which is 25% of his salary; how much does he receive a year?

24 A man bought melons for $1.08 a dozen and sold them at the rate of 2 for 25 cents; what was his profit on the sale of 66 melons?

25 Mr York's bill for oil used in his oilburner in December was $23.94. If the oil cost 9¢ a gallon, how many gallons were used?

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Part II

Answer five questions from this part. Reduce each result to its simplest form and mark each answer Ans.

26 A party of 5 people went on a motor trip lasting 2 days. In computing the expense the following items must be considered:

Distance traveled, 600 miles.

Car averaged 12 miles per gallon of gasoline, gasoline costing 20¢ a gallon.

Car averaged 300 miles per gallon of oil, oil costing 90¢ a gallon.

Tires cost when new $120 for a set of 4 and have an average life of 12,000 miles.

Meals: Dinner @ 75¢ per person a day.
           Lunch @ 50¢ per person a day.
           Breakfast @ 50¢ per person a day.

Rooms: 2 nights @ $1.50 per person a night.

Extras: Amusements and souvenirs $15; repairs to car $25.

Using the above information, answer the following:
  a How many gallons of gasoline were used? [2]
  b Find the cost of the gasoline. [2]
  c How many gallons of oil were used? [2]
  d Find the cost of the oil. [2]
  e Find the cost of meals for *one* person for the two days. [2]

27 Using the information given in question 26, answer the following:
  a Find the cost of rooms for the party for the two days. [2]
  b What was the cost of wear on the tires? [2]
  c What was the total cost of the trip? [2]
  d What was the cost of the trip per mile? [2]
  e What was the cost of the trip per person? [2]

28 A truck gardener sent to a commission merchant a load of celery, which was sold for $525. The gardener paid the agent a commission of 7% and the transportation cost of $40.25. How much did the agent receive? How much did the gardener receive? [10]

29 In 1927 the school tax in a rural district was 6 mills on $1. The property of A. C. Richards was assessed for $8246. Find his school tax. [10]

30 A rectangular tank 4 feet deep and 7 feet wide contains 294 cubic feet; how long is the tank? [10]

31 Mr Lamont has $387.49 in the bank on the first day of the month. During the month he makes the following deposits: $75, $92.85, $26.59, $149.76. He draws checks for the following amounts: $286, $7.53, $29.80, $57.60. How much has he in the bank at the end of the month? [10]

32 Albert Smith borrowed $250 of A. B. Hall and gave his note for 3 months at 6% interest; write the note [4] and compute the interest due Mr Hall at the end of the 3 months [6].

33 A man takes out a 20-year endowment life insurance policy for $5000 at an annual premium of $43.50 per $1000; if he lives the full term, how much more does he receive than he paid in premiums? [10]