

ARITHMETIC

Wednesday, September 15, 1909—9.15 a. m. to 12.15 p. m., only

Answer 10 questions. Give all operations (except mental ones) necessary to find results. Reduce each result to its simplest form and mark it Ans. Each complete answer will receive 10 credits. Papers entitled to less than 75 credits will not be accepted.

1 Define prime number, composite number. Write all the prime numbers between 50 and 80.

2 Given a quotient of 7508, a divisor of 7406 and a remainder of 3207; find the dividend.

3 George can shovel the snow from a walk in 25 minutes; Henry can do the same work in 30 minutes. How long will it take them to do the work together?

4 A city block in the form of a rectangle is 237 feet wide and 509 feet long; how many acres does it contain?

5 The cross section of a subway is $15' \times 16'$; its length is $1\frac{1}{2}$ miles. How many barge loads of 1600 cubic yards each will there be of the material excavated in digging this subway?

6 A steamer so changed its position during 24 hours as to necessitate setting the ship's clock ahead about 42 minutes; in what direction was the steamer going and what change had been made in its longitude?

7 A man's investment in business is \$7200; his income for one year is \$1200. What per cent of the income is the investment?

8 A man sold a cow for \$48 and thereby gained 20 per cent of the purchase price; what was his gain?

9 In what time will \$980 amount to \$1200 at 5 per cent simple interest?

10 A man whose property is assessed \$3264 pays a school tax of \$16.32; the total tax raised is \$4800. What is the assessed valuation of the district?

11 If 2 men can do a piece of work in 28 days, how long will it take 5 men to do the same work? Solve by analysis.

12 The area of a square is 841 square inches; find the area of another square whose side is the longest straight line that can be drawn in the first square.