

high, and 16 ft. wide; what would be the length of each side of a cubical pile containing the same quantity?

*Examination XXXVI. June 6, 1878.*

870. The Atlantic cable costs as follows: 2500 miles at \$485 per mi.; 10 miles deep sea cable, @ \$1,450 per mi.; 25 miles shore ends @ \$1,250 per mi. What was the cost?

871. What is the number which divided by 453 gives the quotient 307, and the remainder 109?

872. Which are the so called "Fundamental Rules" of Arithmetic? and (873), why are they so called?

874. What is a *prime factor*?

875. Find the prime factors of 2366.

876. A man working for \$2 a day, and paying \$4 a week for board, saved \$72 in ten weeks. How many week-days was he idle?

877. What is a *fractional unit*?

878. Reduce  $\frac{4}{15}$ ,  $\frac{5}{75}$ ,  $\frac{3}{6}$  and  $4\frac{1}{2}$  to the least common denominator.

879. From  $28\frac{1}{2}$ , subtract  $3\frac{3}{7}$ .

880. Divide  $\frac{5}{12} \times 18.25$  by  $\frac{1}{2} \times \frac{7}{8} \times \frac{5}{17} \times \frac{3}{35} \times 51.72$ .

881. Divide 46.1975 by 54.35.

882. From a hogshhead of molasses, 28 gal. 2 qt. were drawn; what *common fraction* represents the part of a hhd. which remained?

883. What *decimal part* of a fathom is  $3\frac{1}{2}$  ft?

884. If the consequent be  $3\frac{1}{2}$  and the ratio 7, what is the antecedent?

885. When are *three* numbers said to be proportional?

886. If a water pipe discharge 24 bbl. in 1 h. 14 m., in what time will it discharge 54 bbl.? (Solve by analysis.)

887. What is the cube root of 19.54, carried to 4 decimal places?

888. If it cost \$95.60 to carpet a room  $24 \times 18$  ft. how much will the same kind of a carpet cost for a room  $38 \times 22$  ft.? (Solve by proportion.)

889. What sum of money is that of which, if 80 per cent. be deposited in bank, and 20 per cent. of this deposit be drawn, there will remain \$5,760 in bank?

890. A lawyer collecting a note at a commission of 8 per cent. thereon, received \$6.80. What was the face of the note?

891. Bought stock at par, and sold it at 3 per cent. premium, thereby gaining \$750; how many shares, of \$100 each, did I buy?

892. What is the *amount* of \$16,941.20, for 1 yr. 7 mo. 28 da. at  $4\frac{1}{2}$  per cent. simple interest?

893. An investment of \$7,226.28 yields \$744.7937, annually: what is the rate of interest?

894. In what time will \$273.51 amount to \$312,864, at 7 per cent. simple interest?

895. What is the difference between the *interest* and the *discount* of \$576, due 1 yr. 4 mo. hence, at 6 per cent.?

896. Three men gain \$2,640, of which B. is to have \$6 as often as C. \$4 and A. \$2; what is each one's share?

897. Find the square root of 10795.21.

898. What is the length of one side of a square piece of land containing 40 acres?

899. How is the true discount of a note found?

900. How is the bank discount of a note found?

901. How is the present worth of a note payable at a future time without interest, found?

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*Examination XXXVII. Nov. 7, 1878.*

902. Write in figures: two hundred thousand two hundred.

903. A man owns farms valued at \$56,800; city lots valued at \$86,760; a house worth \$12,500; and other property, \$6,785; what is the entire value of his property?

904. Bought 325 loads of wheat, each load containing 50 bu. at \$2 a bu. What did the wheat cost?

905. Find the greatest common divisor of 679 and 1,869.

906. Find the least common multiple of 4, 16, 20, 48, 60, and 72.

907. What is the *value* of a fraction?

908. Find the value of 12-1250.

909. If the divisor is less than a unit, how will the quotient compare with the dividend?