

*Examination XV. June 8, 1871:*

337. Arrange the following numbers as required for addition, and find their sum; 70100.3042875; 20-514471; 641077.21875; 2564308.875; 320538.609375; 10257235½; 1282154.4375; 90169.0004; 5128617.75; 160269.3046875.

338. What special name or names are given to the period (.), as an arithmetical sign; and what is its use in arithmetic?

339. What two denominations of currency are separated and distinguished from each other by the period used as an arithmetical sign?

340. Mention two or more arithmetical processes or rules in which "Pointing off into periods" is required?

341. Point off into periods and numerate 70100.-3042875.

342. What arithmetical operation would change the value of 320538.609375 to 32.0538609375?

343. Subtract 70100.3042875 from 10257235½.

344. Multiply 1282154.4375 by 90169.0004.

345. Divide 10257235½ by 641077.21875, and indicate by the use of the proper arithmetical sign, whether the quotient is an integral, fractional or mixed number.

346. Change the decimal part of 90169.0004 to the form of a common (or vulgar) fraction, and then reduce it to its lowest terms.

347. Find the prime factors of the integral part of 70100.3042875.

348. Regarding 20514471 as so many square inches, how many square acres, roods, rods, feet and inches would be the equivalent of this expression?

349. Regarding the fractional part of 2564308.875 as the decimal of a pound avoirdupois, to how many ounces would it be equivalent?

350. Represent the first four figures of 160269.-3046875 by the Roman notation.

351 Copy the following bill of items, find the cost of each item, insert it in its proper place on the right, and find the total amount:

ALBANY, May 30, 1871.

Mr. J. B. WOODWORTH,

To A. & E. C. KOONZ, Dr.

To 75 yds. carpeting, @ \$2.50.....	\$
“ 42 “ druggot, @ 1.87½.....	-----
“ 6 mats, @ \$3.25.....	-----
“ 18 rugs, @ \$22.30.....	-----
“ 81 yds. oilcloth, @ \$1.10.....	-----

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\$

Received Payment,

A. & E. C. KOONZ.

352. Suppose that you buy of D. Appleton & Co., of New York, 5 reams of note paper, at \$3.25 per ream, 4,500 envelopes, at \$4.75 per M.; 24 boxes of steel pens, at \$1.12½ per box; 6 French dictionaries, at \$1.50 each; and 3 photographic albums, at \$5.75 each. Make out the bill in regular form.

353. Suppose that the Messrs. Appleton consent to discount 12 per cent from a bill of \$90,875, how much would the required payment become?

354. Analyze (or explain in words the method of solving) the following example: If 6 men can do a

piece of work in 10 days, how long will it take 5 men to do it?

355. Define Ratio.

356. Define Proportion.

357. Define Rule of Three.

358. Solve the following example by the Rule of Three, (or Proportion:)

If a railroad car goes 17 miles in 45 minutes, how far will it go in 5 hours at the same rate?

359. J. Ayers had D. Howe's note for \$1,728, dated Dec. 29, 1869; what will be the amount Oct. 9, 1872, at 9 per cent?

360. What principal will gain \$5.11, in 3 yr. and 6 mo. at 8 per cent?

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*Examination XVI. Nov. 9, 1871.*

361. Express by figures the number: five trillions eighty billions nine millions and one.

362. Add the following numbers :

(<sup>1</sup>) Two hundred and ten thousand four hundred;

(<sup>2</sup>) One hundred thousand five hundred and ten;

(<sup>3</sup>) Ninety thousand six hundred and eleven;

(<sup>4</sup>) Forty-two hundred and twenty-five;

(<sup>5</sup>) Eight hundred and ten.

363. Taking two hundred and ten thousand four hundred as a minuend, and one hundred thousand five hundred and ten as a remainder, what will the subtrahend be, expressed in words?

364. What is the *product* of ninety thousand six

hundred and eleven, and forty two hundred and twenty five?

365. The quotient of one number divided by another is 37; the divisor, 246; the remainder, 230; what is the dividend?

366. What is the greatest common divisor of 1649 and 5423?

367. What is the least common multiple (or dividend) of 21, 35 and 42?

368. What is the value of  $6\frac{2}{3}$  divided by  $8\frac{2}{3}$ ?

369. How many yards of cloth  $\frac{2}{3}$  of a yard wide are equivalent to 12 yards  $\frac{3}{4}$  yards wide?

370. Change  $\frac{4}{5}$  to an equivalent fraction having 91 for its denominator.

371. The difference between  $\frac{5}{8}$  and  $\frac{7}{8}$  of a number is 10: what is that number?

372. What is the sum of  $\frac{7}{8}$ ,  $1\frac{7}{8}$ ,  $10\frac{5}{8}$ , and 5?

373. What will 4868 bricks cost, at \$4.75 per M.?

374. An open court contains 40 square yards: how many stones, nine inches square, will be required to pave it?

375. Change .0008 to a common fraction.

376. Change  $\frac{3}{8000}$  to a decimal.

377. How many cords of wood could be piled in a shed 50 ft. long, 25 ft. wide and 10 ft. high?

378. How many acres of city land at \$2 per square foot, could be bought for a half million dollars?

379. Change 10 oz. 13 pwt. 9 gr. to the decimal of a pound Troy.

380. A man owning  $\frac{1}{4}$  of an iron foundry, sold 35 per cent. of his share: what part did he still own?