

should leak out, the wine remaining will be what decimal part of the full cask?

546. James Riley & Co. bought, July 7, 1873, of Joseph Herr, Trenton, N. J., 15 tons of coal at \$6.50 per ton; 19 tons of coal at \$8.25 per ton; and $14\frac{1}{2}$ cords of wood at \$5.20 per cord. Make a bill of the purchase, and receipt it for Joseph Herr.

547. How much must be paid for 41 gal. 2 qt. $1\frac{3}{4}$ pt. of molasses, at 72 cts. a gal.?

548. If $\frac{11}{12}$ of a ton of hay cost \$18.50, how much will two loads cost, one weighing $\frac{5}{6}$ of a ton, and the other $\frac{13}{14}$ of a ton?

549. What is the difference between the true and the bank discount of \$300, for 3 months, at 8 per cent?

550. What principal on interest at 7 per cent., from April 9, 1871, to Sept. 5, 1873, will amount to \$1,477.59?

551. The difference between the interest of \$600, and that of \$750, at 5 per cent. for a certain time, is \$18.75. What is the time?

552. If 18 men can dig a trench 30 yd. long in 24 da., by working 8 hr. a day, how many men can dig a trench 60 yd. long, in 64 da., working 6 hours a day?

Examination XXIV. June 4, 1874:

553. What is the sum of 3912, 400005, $631\frac{2}{3}$, 736863, .000803, 60708010, $4\frac{4}{1000}$, and 290.68042?

554. Subtract $\frac{4}{5}$ of $9\frac{2}{3}$, from $\frac{5}{11}$ of $151\frac{1}{2}$.

555. What will 250 miles of telegraph wire cost at 3 cts. per ft.?

556. When it is noon at the Cape of Good Hope, in longitude $18^{\circ} 24'$ east, what is the time at Cape Horn, in longitude $67^{\circ} 21'$ west?

557. How many cords of wood in a pile 140 ft. long, $4\frac{1}{2}$ ft. wide, and $6\frac{1}{2}$ ft. high?

558. Required the area in acres, etc., of a piece of land .5 of a mile long, and .3 of a mile broad.

559. How much will it cost to dig a cellar 40 ft. long, 32 ft. wide, and 5 ft. deep, at $\$0.25$ a cubic yd.?

560. $\frac{1}{5}$ of a qr. is what per cent. of $\frac{2}{3}$ of a cwt.?

561. Reduce $\frac{7}{8}$ lb. Troy to units of lower denominations.

562. How much gold will $\$100$ currency buy, gold being at 113?

563. In 1 yr. 4 mo., $\$311.50$ amounted to $\$336.42$, at simple interest: what was the rate per cent?

564. What sum, at 7 per cent. simple interest, will amount to $\$221.07$, in 3 yr. 4 mo.?

565. A note for $\$470.66$, drawn at 60 days, is discounted at bank at 6 per cent.: what are the proceeds?

566. What is the amount of $\$50$, for 2 yr., at 8 per cent. compound interest, payable half-yearly?

567. The four sides of my garden are 168 ft., 280 ft., 182 ft., and 252 ft., respectively. What is the greatest length of boards that I can use in fencing it, without cutting any of them?

568. A garden has 4 sides, respectively 168, 280, 182, and 252 ft. long. Suppose that each board is 8 in. wide, and that the fence is 5 boards high: how

many sq. ft. of boards will it require to fence the garden?

569. Suppose that you sell to John Clarke, of New York, for cash, 75 yd. of carpet, \$1.55 per yd.; 30 yd. drugget, at \$1.30 per yd.; 5 mats at \$3.15 each, and 35 yd. of oil cloth, at \$1.05 per yd. Make a receipted bill of these articles, in regular form.

570. What is the value of $(\frac{2}{3} \times \frac{5}{8} + 3\frac{2}{7}) \div \frac{3}{8}\frac{3}{4}$?

571. What is the least number that 8, 12 and 16 will each divide without remainder?

572. What will 11 lb. 4 oz. of tea cost, if 3 lb. 12 oz. cost \$3.50?

(Solve by proportion.)

573. If a man travels 107 miles in 15 days, employing only 9 hours a day, how far would he go in 20 days, travelling 12 hours a day, at the same rate per hour?

574. What debt can be discharged in a year by weekly payments in arithmetical progression, the first being \$24, and the last \$1,224?

575. What is the length, in feet and inches, of each side of a square carpet, made from $208\frac{1}{2}$ yds. of Brussels carpeting, $\frac{3}{4}$ yd. wide?

576. What is the length of the side of a cubical box which contains 389017 solid inches?

Examination XXV. Nov. 5, 1874.

577. Find the sum of the following numbers, arranging them properly for addition: 14.2351; 651.012; 2.219; .0374; .00146.