

2. A man bought 30 gallons of brandy at \$2.50 per gallon, the duty amounting to \$12 more. At how much per quart must he sell it, so as to gain $\frac{1}{5}$ of the whole cost?

Ans. 87 cts.

3. In the previous question, if he had added 5 gallons of water to the brandy, the other conditions remaining the same, what should the selling price have been?

Ans. 74 $\frac{1}{2}$ cts.

4. In No. 2, how many gallons of water would have to be added to the brandy, so that there would be neither gain nor loss by selling the mixture at 50 cts. per quart?

Ans. 13 $\frac{1}{2}$ gallons.

5. *A* can do a certain amount of work in 20 minutes, *B* can do 4 times as much in an hour, and *C* can do as much in four hours as *B* can do in 5 hours. When the three men work together for a day they can earn \$6, how should the money be divided?

Ans. *A* \$1.50; *B* \$2; and *C* \$2.50.

6. A sovereign is worth \$4.86 $\frac{2}{3}$, a franc is worth 19 cents; how many francs should be received for 57 florins—a florin being worth two shillings? *Ans.* No. of francs is 146.

7. A man paid for insuring his house $\frac{1}{10}$ of the amount for which he insured it, and he insured it for $\frac{1}{3}$ of its value; the amount paid for insurance was \$30, what was the value of the house? *Ans.* \$1800.

8. In the previous question had the house been worth \$2700, how much would the owner have had to pay for insurance, other conditions remaining the same? *Ans.* \$45.

9. A woman bought a certain number of yards of dress goods at one dollar per yard, and half as many yards of lining at half as much per yard. Altogether she paid out

\$12.50 for the goods, how many yards of each kind did she buy?

Ans. 10 yards of dress goods, and 5 yards of lining.

10. If a man receive 75 cents for cutting a cord of wood, each stick into 3 pieces, how much should he receive for cutting another cord, each stick into 4 pieces?

Ans. \$1.12 $\frac{1}{2}$.

11. The interest on a certain sum of money for 2 years is \$240, the true discount is \$214 $\frac{1}{2}$, find the amount and the rate per cent.

Ans. \$2000.

12. A merchant had a stock of goods, of which tea formed 20 per cent. of the total value; he afterwards bought \$600 worth of tea and \$200 worth of sugar; his tea then formed 27 $\frac{1}{2}$ per cent. of his whole stock, find the value of that stock. *Ans.* \$6000.

13. At 6 a.m. (sunrise), on March 21st, two men, *A* and *B*, get on 'express trains at the same place. *A* goes due west, at the rate of $\frac{1}{2}$ degree per hour; *B*, due east at the same rate; find by how many minutes *A*'s day exceeds *B*'s in length. *Ans.* 48 $\frac{8}{9}$ '.

14. A miner took some gold dust to town to sell. The purchaser of it undertook to cheat him by substituting avoirdupois weight for troy weight in weighing the dust. According to this the miner had 1 lb. 7 oz. of dust, and he was paid for it at the rate of \$16 per oz., the market price bring \$16 per oz. troy. Who gained by the use of the wrong weight, and how much?

Ans. Miner gained; \$32 $\frac{1}{2}$.

15. A traveller on a railroad train notices that if he takes 2 $\frac{1}{2}$ times the number of spaces between the telegraph poles which he passes in a minute, he gets the rate of the train in miles per hour; how far apart were the telegraph poles? *Ans.* 66 yards.