Shrewsbury School.

Arithmetic.

April, 1890.

VI., V. AND SHELL.

1. What number added to itself 59 times will give 3030600 ?

2. Simplify—

   (1) $\dfrac{8\frac{7}{8}-7\frac{6}{7}+5\frac{5}{6}-4\frac{4}{5}}{9\frac{9}{10}-8\frac{13}{15}+7\frac{7}{8}-6\frac{6}{7}}.$

   (2) $\dfrac{1}{4-\dfrac{1}{2-\dfrac{1}{1-\frac{5}{13}}}}.$

3. (1) Express $\frac{1}{5}+\frac{1}{6}+1\cdot2\dot{7}\dot{1}+1\cdot3\dot{5}$ as a decimal.

   (2) Divide $\cdot4433$ by $12\cdot4$.

4. Extract the square of $2\frac{33439}{50625}$.

5. Express $\frac{1}{2}$ of 4 lbs. 3 oz. 10 dwts. 20 grs. as the fraction of 6 lbs. 5 oz. 6 dwts. 6 grs.

6. Express $\cdot\dot{2}\dot{7}$ of 3 fur. $+\cdot3125$ of 1 fur. 8 po. $+\cdot041\dot{6}$ of 16 po. as the dec. of 4 poles 3 yds.

7. How should a grocer mix tea at 2s. 1d., 2s. 3d., 2s. 8d., and 3s. 6d. to sell the mixture at 2s. 10d., and gain 4d. per lb. ?

8. To find the cost of papering with paper 2 ft. wide, at $5\frac{3}{4}$d. a yard, the walls of a room 17 ft. 5 in. by 16 ft. 4in. by 12 ft., having in it a door 8 ft. 3 in. by 3 ft. 3 in., and 2 windows each 5 ft. 3 in. by 4 ft. 4 in., and a fireplace 6 ft. 3 in. by 4 ft. 9 in.

9. Find the value of 9 cwt. 3 qrs. 9 lbs. at £24 7s. 8d. per cwt.

10. A train travelling at the rate of $33\frac{1}{2}$ miles an hour takes 6 hours 45′ over a journey ; how long would a train travelling at the rate of $38\frac{4}{7}$ miles an hour take to do the same journey ?

11. Divide £265. 5s. 8d. among 2 men, 3 women, and 4 children so that each woman's share may be twice as much as a child's, and each man's share 3 times as much as a woman's.

12. Tea is mixed—2 lbs. at 2s. 8d. with 7 lbs. at 1s. 11d. If it be sold to gain 12 per cent. what is the selling price a lb. ?

13. Find the amount of £2160. 12s. 6d. at 5 per cent. per annum simple interest for 1 year 73 days.

14. Find the difference between the true and bankers' discount on £1114. 11s. 8d. due $1\frac{3}{4}$ years hence at 4 per cent. [Banker's discount.$=$ Simple Interest.]

15. A man buys £4786. 5s. stock at 98 and sells at $99\frac{3}{4}$. What profit does he make ?

16. A man sold stock out of the 4 per cent. stock at $118\frac{3}{4}$ and invested in the three per cents. at 95, thereby decreasing his income by £2. How much did he sell ?

17. In a boat race 1 mile in length A crew beat B crew by 10 yards rowing down stream. The A crew beat C crew by 60 yards also rowing down stream. If it takes $1\frac{3}{4}$ times longer to row up stream than to row down stream, by how much would B crew beat C crew if the race is rowed up stream ?