

Shrewsbury School.

ARITHMETIC PRIZE.

June 13th, 1896.

- ✓ 1. Find the difference between $11\frac{5}{6}$ of $\frac{1}{6}$ of £3 7s. 9d. and $2\frac{2}{3}$ of £27 8s. $6\frac{1}{2}$ d. Reduce to their lowest terms $\frac{7413}{10237}$ and $\frac{4393\frac{1}{3}}{7789\frac{1}{11}}$.
- ✓ 2. Find the value of $5\cdot023$ of 2 tons 11 cwt., and express 21 dys. 7 hrs. 21 min. 42 sec. as the decimal of a week.
- ✓ 3. Supposing the telegraph-posts by a railway to be placed at intervals of 70 yds. at what rate is a train travelling which passes three of these intervals in 11 secs.? Find the least distance from each other of two posts an exact number of furlongs apart.
- ✓ 4. Find in square feet and inches the surface of a square $\cdot75$ yd. each way; and the area of a rectangle whose length is double its breadth, and whose perimeter is 11.04 ft.
- ✓ 5. If 3 men can earn £4 2s. 3d. in 7 days, how many must work 27 days to earn altogether £68 17s., the daily rate of wages being increased by 4d.?
- ✓ 6. A piece of cast iron is $56\frac{3}{4}$ in. long, $16\frac{1}{2}$ in. broad, and $\frac{3}{4}$ in. thick find its weight at 4.203 oz. per cub. in.
- ✓ 7. A tradesman sold goods for £80, and found he had lost 4 per cent.; what was the prime cost of the goods? and for what should he have sold them to gain 15 per cent.?
- ✓ 8. On the 1st of March, A lends to B £30 8s. 4d. at $4\frac{1}{4}$ per cent., and on the 9th of May an additional sum of £76 0s. 10d. at $4\frac{1}{2}$ per cent.; how much will B have to repay altogether on the 17th of September?
- ✓ 9. How much 4 per cent. stock at 103 can be purchased for £25 15s.? and what will be received from a half-year's dividend?
- ✓ 10. In a good harvest a ton of wheat is grown on an acre; how many square yards will produce a quarter of wheat, the average weight of a bushel of wheat being $61\frac{1}{4}$ lbs.?
- ✓ 11. The four highest marks obtained in four different examinations are 751, 1197, 2736, and 5016 respectively; and four lowest are 19, 31, 50, and 131; if the four highest candidates are of equal merit, which is the best of the four lowest?

- ✓ 12. If a cube whose edge is 3 in. be placed with one angular point on a table, find to three decimal places the greatest height at which the opposite point may be above the table.
- ✓ 13. Pure spirit can be bought at 14s. per gal.: a wine merchant reduces this spirit with water until he gain 25 per cent. by selling his mixture at 12s. 6d. per gal.; in what ratio does he mix the spirit and water?
- ✓ 14. Gold is sold to the Mint at £3 17s. 9d. per oz., and is mixed with an alloy worth 5s. 2d. per oz. in the ratio of 11 : 1; if sovereigns be coined out of this mixture each weighing 5 dwts. 3.247 grs., what profit is made by the Mint on 100 sovereigns?