

- 10 4. If a person divide 4684 apples among 222 sheep, how many will each get?
- 15 5. If 24 men can do a piece of work in 25 days, in what time could they do it with the aid of 16 more men?
- 15 6. Bought 186 animals for \$8,508, and sold 98 of them at \$75 each and the balance at cost. How much did I gain?
- 15 7. Among how many families can 9,502 loaves of bread be divided so that each family will get 46 loaves, except one family which is to get 72 loaves?
- 20 8. Two travellers, A and B, meeting on a journey, found that the whole distance both had travelled was 8840 miles, and that A had gone 600 miles farther than B; each had travelled 27 days. How far had B gone per day?

THIRD CLASS—TIME, TWO HOURS.

- 10 1. Fence boards being 12, 14, 16 feet long, what is the shortest fence that can be built exactly by each kind of boards?
- 15 2. A and B are travelling in the same direction; they are 2 miles 18 perches apart. B gains on A 8 perches in 24 perches that A travels. How far must B travel before he overtakes A?
- 15 3. A person having 2496 bushels of potatoes, and desires to put them in pits holding respectively 12, 16 and 24 bushels, and having an equal number of each sized pits. How many pits altogether will there be?
- 4 4. Define Multiple, Measure, Fraction, Denominator.
- 15 5. A, B, C and D dine at a hotel; A and B each pay $\frac{1}{2}$ less than C, D pays $\frac{1}{2}$ more than C; the bill is \$2.20. Find how much each must pay.
- 11 6. Write avoirdupois weight and reduce 8,000 lbs. troy weight into cwt., grs., etc., avoirdupois.
- 10 7. A block of land is 4 miles long and 8 miles wide. What is it worth at \$25 an acre?
- 20 8. How many houses, each with a frontage of 22 ft. 4 in., can be built on a terrace having a frontage of 280 ft. 8 in., allowing for a roadway at each end of 12 ft. 8 in., and a space of 8 feet between every two houses?

FOURTH CLASS—TIME, TWO HOURS.

- 15 1. An army having lost $\frac{1}{4}$ of its numbers in killed and wounded and 4,000 prisoners was reinforced by 8,000 men; it then lost $\frac{1}{4}$ of its number and had 18,000 men left. Find original number.
- 12 2. State the difference between pure and mixed circulating decimals. What fractions are convertible into terminating decimals? Find the difference between $\frac{2}{3}$ and $\frac{1}{9}$.
- 15 3. Three lines of paling run side by side for a distance of 150 yards. The upright posts are respectively 2 $\frac{1}{2}$, 3 $\frac{1}{2}$, 4 $\frac{1}{2}$ feet apart. How often can a person walking outside and looking across this line of paling see three posts in a line?
- 15 4. Define solar year. How does it differ from the common year? How is the confusion which would arise from this difference obviated?
- 10 5. Find the cost of carpeting a room 18 ft. 6 in. long and 9 feet wide with carpet 27 in. wide, worth \$1.25 per yard.
- 10 6. If 4 $\frac{1}{2}$ of tea cost 28 $\frac{1}{2}$ ¢, what will 8 $\frac{1}{2}$ lbs. cost?
- 18 7. A can do as much work in 8 days as B can in 4 days, and B as much in 6 days as C in 5 days: in what time can C do as much work as A can do in 12 days?
- 10 8. Three times a certain number plus 10 equals four times the number minus 15. Find the number.

FIFTH CLASS—TIME, TWO HOURS.

- 8 1. Show that a number which will divide each of two others will divide their difference or their sum.
- 15 2. A buyer expended equal sums of money in buying oats, rye, and corn; he cleared 4 per cent. on the oats, 7 per cent. on the rye, and lost 3 per cent. on the corn; the whole amount received was \$8,000. How much did he invest in each kind of grain?
- 8 3. Define Foreign Exchange, Intrinsic Par of Exchange, and Course of Exchange. Explain what is meant by the balance of trade being against a country.

- 15 4. Debentures are issued at 8 per cent. for 10 years for raising \$6,000, how much must be collected in tax each year to form a sinking fund to redeem the debentures, principal and interest at maturity?
- 15 5. What sum of money must be saved annually by a young man of 21 that when he is 50 he may have \$25,000, the money being invested at 6 per cent. compound interest?
- 20 6. A merchant made a mixture of wine at 28s. per gallon with brandy at 42s. a gallon: he found that by selling the mixture at 35s. a gallon he gained 15 per cent. on the price of the wine and 20 per cent. on the price of the brandy. In what ratio were the wine and brandy mixed together?
- 9 7. Investigate a method for finding the cube root of a number.
- 10 8. The remainder in dividing any number by 9 is the same as in dividing the sum of its figures by 9. Prove this.

MENTAL ARITHMETIC.

FIRST CLASS—TIME, TWENTY MINUTES.

1. A farmer sold 20 bushels of peas, 80 bushels of turnips, and 40 bushels of barley; how many bushels did he sell?
2. In one class there are 12 boys and 4 girls, in another 8 boys and 8 girls, how many pupils in the two classes?
3. A boy had 90 cents; he paid 14 cents for candy, 25 cents for apples, and 80 cents for a book; how many cents had he left?
4. Bought a sleigh for \$20, paid \$10 for a new box for it, and \$6 for painting it. How much will be gained by selling it for \$36?
5. In one field there are 20 cows; in another field 5 less than in the first field; how many in both fields?
6. A boy bought 15 marbles; then one boy gave him 12, another 9, and another enough to make up his number to 45; how many did the last boy give him?
7. Bought some eggs for 55 cents; how much will I gain if I sell part of them for 82¢ and the rest for 40¢?
8. Suppose John is 26 years older than James, and William 4 years younger than John, which is the older, James or William, and by how much?

SECOND CLASS—TIME, TWENTY MINUTES.

1. It is 44 years since the rebellion in Canada, and 14 years since Confederation, how many years between the rebellion and Confederation?
2. If A earns 12 cents a day, B 15 cents a day, and C 20 cents a day, how many cents will the three boys earn in 5 days?
3. Bought a horse for \$80; gave in payment 6 tons of hay at \$9 a ton, and the balance in cash; how much cash was given?
4. A drover bought 28 sheep at \$3 each, and 5 cows at \$26 each, what did the whole cost?
5. Multiply 18 by 8, subtract 50, add 12, divide by 8, multiply by 7; what is the result?
6. If 5 boys get 7 apples each out of 50 apples, and the rest be divided equally among 5 girls, how many will each girl get?
7. If 20 sheep be bought for \$90, at how much each must they be sold that the buyer may double his money?
8. A man bought an equal number of pigs and calves for \$84. Each pig cost \$3 and each calf \$4; how many of each did he buy?

THIRD CLASS—TIME, TWENTY MINUTES.

1. If a bin of oats will last 20 horses 10 days, how many horses must be taken away that it may last the remainder 20 days.
2. Divide 8 bushels of wheat into parcels containing 8 lbs., 4 lbs. and 5 lbs. respectively, so that there will be an equal number of parcels of each kind. How many parcels will there be altogether?
3. 4 sheep cost as much as 12 calves; one calf cost \$6. What will one sheep cost?
4. A horse was sold for \$90, which was $\frac{1}{4}$ of his cost price. How much was lost?
5. How many dollars will 8 cwt. of flour cost if 25 lbs. cost 50¢?
6. Find the cost of 8 $\frac{1}{2}$ lbs. cloverseed at \$5.40 per bush.
7. John has 45¢, James 50¢, and William 75¢; what is the highest number of oranges each one can buy at the highest price that will allow each one to invest all his money?
8. Walter has \$ $\frac{1}{2}$, Jane and Mary have each \$ $\frac{1}{4}$. How much less has Walter than the two girls?

FOURTH CLASS—TIME, TWENTY MINUTES.

1. A fence paling is 8 inches broad and 4 feet long; if the palings