

ALGEBRA.

$$1. \text{ Simplify } \frac{\frac{1}{a^2} + \frac{1}{b^2}}{\frac{1}{a^2} - \frac{1}{b^2}} + \frac{\frac{1}{a} + \frac{1}{b}}{\frac{1}{a} - \frac{1}{b}}$$

2. Find the G. C. M. of the expressions $4x^4 - 33x^3 + 76x^2 - 39x$, and $6x^3 - 46x^2 + 93x - 27$.

3. Define *simultaneous equations*. State the three methods usually given for solving them, and apply each method to the solution

$$\begin{aligned} 7x - 11y &= 3 \\ 5y - 6x &= -7. \end{aligned}$$

4. Divide the numbers 80 and 90 each into two parts, so that the sum of one out of each pair may be 100, and the difference of the other pair 80.

5. Divide $a^3(b-c) + b^3(c-a) + c^3(a-b)$ by $a+b+c$, and find the factors of the quotient.

6. Find the values of x and y in the equations,

$$\begin{aligned} (a+b)x + (a-b)y &= 2ac \\ (b+c)x + (b-c)y &= 2bc. \end{aligned}$$

GEOMETRY.

1. Quote the sixth Postulate, explain precisely the use made of it by Euclid, and write a general note on the subject.

2. In any right-angled triangle, the square which is described on the side subtending the right angle is equal to the squares described on the sides which contain the right angle.

3. From two given points on the same side of a given straight line, draw two straight lines which shall meet in the given straight line, and make equal angles with it.

4. The sum of the interior angles of any rectilinear figure together with four right angles is equal to twice as many right angles as the figure has sides.

5. The vertical angle O of a triangle OPQ is a right, acute or obtuse angle, according as OR , the line bisecting PQ , is equal to, greater or less than the half of PQ .

6. If a straight line be divided into two equal parts and also two unequal parts, the rectangle contained by the unequal parts, together with the square on the line between the points of section, is equal to the square on half the line. From this deduce as a corollary the algebraical formula $a^2 - b^2 = (a+b)(a-b)$.

7. AD is drawn peculiar to AB , the hypotenuse of a right-angled triangle ABC , equal to AC ; show that CD is parallel or perpendicular to the line bisecting the angle ABC .

SCHOOL SYSTEM AND SCHOOL MANAGEMENT.

1. State the objects for which money may be voted by the School Meeting, and the principles which regulate the assessment of the sum voted.

2. What are the chief duties assigned to teachers by law?

3. Discuss the general principles by which you would be guided in administering punishment, and specify thereunder improper methods.

4. State the objects of physical exercises in school, and give an outline of a course of such exercises.

5. State your views as to how far, and when, a pupil should be assisted in the preparation of his lessons.

TEACHING.

1. Give an exact definition of an Object Lesson. Specify mistakes commonly made in conducting Object Lessons.

2. Explain as to a class the distinction between indirect and direct object.

3. State what you conceive to be the value and proper use of written examinations.

4. State what you regard as the distinguishing characteristics of good reading, and describe the methods by which you would seek to secure these qualities in the reading of your pupils.

5. Give full notes of an oral lesson on "Causes affecting Climate."

THIRD-CLASS LICENSES (Grade D.)

GEOGRAPHY.

1. Name and locate the zones. In what zones are North America, Europe, South America, Asia, Africa, and Australia?

2. Name the natural boundaries between Ontario and the United States; P. E. Island and Nova Scotia; Kentucky and Indiana; Ireland and Great Britain; Norway and Sweden; France and Spain; Malay Peninsula and Sumatra.

3. Contrast New Brunswick and Nova Scotia in respect to

area, climate, situation and natural products. Name the chief towns of Quebec and the coast waters of Newfoundland.

4. Name the countries of South America, with their capitals. Give also the river-systems of that continent. Which of its countries has no sea-coast?

5. Locate the following cities, and tell for what each is noted: Sheffield, Milwaukee, Belfast, Bahia, Madras, Ghent, Bergen, Leeds, Vera Cruz, Tokio, Marseilles, Odessa, Paisley, Pittsburg, Trieste and Brisbane.

6. England—its coast waters, rivers, surface, and chief towns.

7. Give a short description of Africa, and account if you can for our limited knowledge of the interior of the continent.

8. Draw an outline map of Nova Scotia.

HISTORY.

1. Tell what you can of the following battles. *Hastings, Crecy, Bosworth, Flodden, Blenheim, Trafalgar.*

2. Mention the chief events in the reign of Queen Anne.

3. Describe the characters of the four Georges.

4. Tell what you know of any two of the following personages: William Wallace, Thos. Becket, Wolsey, Duke of Monmouth, Marlborough, Wellington, Gladstone, John Bright.

5. Give a short account of the Crimean War.

6. Describe De Monts' connection with the history of Nova Scotia.

7. Relate the story of D'Anville's Expedition.

8. Describe as fully as you can the establishment of the Free School System in Nova Scotia.

COMPOSITION.

1. Name and indicate the chief points made use of in Punctuation, and punctuate the following passage in as many ways as you can:

"Hurbert rode on his brother's horse being lame he did not reach home till midnight."

2. Make simple sentences with each of the following verbs: chirp, drop, expand, excel, roll, creep, discover, catch, glitter, cling, watch, trust.

3. Correct or justify the following: I do not know who to send this to. I lay in bed this morning until 8 o'clock. Take this chair and set down. I don't know anything about it. Feathers feel soft. I will not go but once. This has been a remarkable fine winter. Ethan Allan, being a rash man, tried to conquer Canada. The right and left lung were diseased.

4. Write a letter to a Board of Trustees, asking for a situation and stating your qualifications for the position.

BOOK-KEEPING.

1. Write a Promissory Note to be paid on demand; also an order for Goods.

2. Make out a Grocer's account, extending over a period of two months with at least ten entries.

3. Rule a form for Day Book and Ledger combined, and enter in it transactions with eight different persons.

GRAMMAR.

1. Describe fully the *Classification of Nouns*.

2. Give the rules for the formation of the Possessive Case, and write in full the declension of *ox, chief, thief*.

3. (1) Explain the formation of the Comparative and Superlative Degrees. (2) Compare *poor, wet, merry, coy*, and explain differences in modes of formation.

4. Mention the chief verbs of *incomplete predication*. How do such verbs differ from transitive verbs on the one hand, and intransitive on the other?

5. Parse: So parted they as either's way them led. Also italicized words in 7.

6. Name the different grammatical varieties of extension.

7. Analyze:

For me, scarce hoping to attain that rest,
Always from port withheld, always distressed;
The howling winds drive *devious*, tempest-tossed,
Sails ren', seams opening wide, and compass lost.

ARITHMETIC.

1. Define Number, Notation, Minuend, Quotient; given the divisor, quotient and remainder, how is the dividend found?

2. What are the terms of a fraction? Simplify:

$$\frac{\frac{5}{6} \div \frac{2}{3}}{\frac{4}{5} - \frac{1}{11}} + \frac{\frac{1}{2} - \frac{1}{9}}{(\frac{2}{3} - \frac{1}{4}) \times \frac{1}{5}} \times \frac{2\frac{1}{2} + \frac{1}{3}}{6 - \frac{1}{8}}$$