4. Describe a circle which shall circumscribe a given triangle.

5. If from the vertical angle of a triangle three straight lines be drawn, one bisecting the angle, the second bisecting the base, and the third perpendicular to the base, show that the first lies, both in position and magnitude, between the two.

6. If from points in the base of an isosceles triangle perpendiculars be drawn to the sides, their sum is the same for each of the points.

7. Construct a square, having given (1) the sum of the diagonal and the side, [2] their difference.

8. Name four systems, of three lines each, which lines, when drawn from similar points in the perimeter of a triangle, meet in a point within the triangle; and prove that the perpendiculars from the angles of a triangle to the opposite sides meet in a point.

ALGEBRA.

1. Prove the "Rule of Signs" in Multiplication; and multiply

$$a^{\frac{3}{2}} - a^{\frac{2}{3}} + a^{-\frac{1}{3}} - a^{-\frac{3}{2}} \text{ by } a^{\frac{3}{2}} + a^{\frac{2}{3}} - a^{-\frac{1}{3}} + a^{-\frac{2}{3}}$$

2. Two trains 92 ft long and 84 ft long respectively are moving with uniform velocities on parallel rails. When they move in opposite directions they are observed to pass each other in one second and a half; but when they move in the same direction the faster train is observed to pass the other in six seconds, find the rate at which each train moves.

3. Define *Ratio* and *Proportion*, and compare Euclid's definition of *Proportion* with that used in Algebra.

4. Given $\dfrac{\sqrt{1+x}}{1+\sqrt{1+x}} = \dfrac{\sqrt{1-x}}{1-\sqrt{1-x}}$ to find the value of x.

5. A commences a piece of work alone, and labors for two-thirds of the time that B would have required to perform the entire work. B then completes the job. Had both labored together it would have been completed two days sooner, and A would have performed only half what he left for B. Required the time in which they would have performed the work separately.

6. Prove the general formula for finding the sum of an arithmetical series, and insert 7 arithmetical means between 8 and — 4.

UNIVERSAL HISTORY.

1. [a] Define History, giving its divisions and chronological periods. [b] Name the three main branches of the Caucasian race, with the type of civilization peculiar to each.

2. [a] Name, and give dates of the rise and fall of the principal Oriental Monarchies; [b] and, outside of Europe, geographically locate the chief centres of population in ancient times, stating the causes that led to their selection.

2. When was the "Age of Pericles," and for what remarkable?

4. Who composed the first and the second Triumvirates?

5. Give a short sketch of the life of one of the following: Belisarius, Mahomet, Charlemagne or Peter the Hermit.

6. Describe the chief re-adjustments of territory and political power on the Continent of Europe which have taken place since the downfall of Napoleon I.

PRACTICAL MATHEMATICS AND NAVIGATION.

1. Construct a scale of Chords.

2. Define Sine, Tangent, Secant, and give a rule for finding the angles of an oblique-angled triangle when the three sides are given.

3. A right-angled triangle having an hypotenuse 16 ft long and its base 20 inches is revolved about its perpendicular, find the volume and surface of the solid generated.

4. Explain the terms, Variation, Deviation, and "Dip of the Needle."

A ship is steering by compass N. W. ¾ W. the variation of the compass is 2¼ points W., the wind is S. E., leeway ¼ point, deviation 6° W., find the true course.

5. A field of the form of an equilateral triangle contains just half an acre. What must be the length of a tether fixed at one of its angles, and the other end to the nose of a horse, so as to allow him to graze exactly one half of it?

6. What do you mean by the traverse table? Explain its use, and describe how it is constructed.

7. A flag-staff consists of two parts, a mainmast and a topmast. The height of the mainmast is 136 ft. 4 in., and the length of the topmast is 14 ft. At what distance from the foot of the flagstaff does the topmast subtend the greatest angle?

BOOK-KEEPING.

1. Give in full your method of closing a set of Books [Double Entry].

2. With what should the following accounts be credited, and for what debited: Stock, Cash, Merchandise, Bills Payable, Bills Receivable, Interest, Insurance, Profit and Loss?

3. Write out a specimen "Bill of Exchange," and "Joint Promissory Note."

4. Journalize the following transactions:

[a] July 1st, 1880. I commence business, investing as follows: Cash $6000; Mdse $2,500; Wood for use in store $150. I owe on note in favour of Duffus & Co., dated May 1st, at 6 mos., $1200 at 7 per ct,.

[b] Bought of John Jones Mdse, as per invoice, $1200. Gave in payment my note for $600 at 30 days. Balance on acct.

[c] Received from John Smith 100 Bls. Flour. invoiced at $6 per Bl., to be sold on his account and risk. Paid truckage by order on Wm. Brown, $50.

PHYSIOLOGY.

1. Describe the vertebral column.

2. [a] Name the most important chemical constituents of the blood. [b] What is meant by coagulation?

3. What do you understand by the tissues? Illustrate.

4. Describe the course of the circulation of the blood.

5. Why are fresh supplies of food continually necessary? Discuss the various food stuffs.

Second-Class Licenses (Grade C).

BRITISH HISTORY.

1. Write a sketch of the reign of Stephen.

2. What are the chief constitutional changes of the reign of Edward I?

3. Name the chief battles of the "Wars of the Roses", and describe the last one.

4. Name the reign in which each of the following Statutes was passed: *Præmunire, Self-denying Ordinance, Triennial Bill, Act of Settlement*, First *Reform Bill*, Second *Reform Bill, Septennial Act, Act of Emancipation, Repeal of the Corn Laws*.

5. Write a brief note on one of the following characters: Joan of Arc, Margaret of Anjou, Mary Queen of Scots.

6. Describe the Indian Mutiny.

BRITISH AMERICAN HISTORY.

1. Describe briefly the Canadian Rebellion, giving dates, principal personages engaged, causes, and final solution of difficulty.

2. Narrate the history of D'Anville's Expedition.

3. Assign events connected with British American History to 1534, 1642, 1673, 1710. 1747, 1759, 1794, 1825, 1848, 1860.

4. Where was Fort Beausejour? To support what claim was it built? Describe its capture.

5. Mention the name of Nova Scotians who have acquired distinction in the military or naval service of the Mother Country, giving as much information concerning their careers as you can.

GENERAL GEOGRAPHY.

1. Define Steppe, Oasis, Snowline, Plateau, Zone, Axis, Ecliptic, and Estuary.

2. Give a physical description of Holland. Name the capital, chief cities and foreign possessions.

3. Name the rivers of Great Britain flowing into the North Sea, with the chief cities on their banks.

4. Where and what are the following: The Solent, Parry Sound, the Deccan, Goa, Iviza, Obi, Saghalien, Sarawak, the Downs, Stromboli, the Lizard, Elsinore.