15. Barrie to Meaford :—Barrie, Collingwood, Meaford.
16. Hamilton to Port Dover :—Hamilton, Caledonia, Port Dover.
17. Hamilton to Barrie :—Hamilton, Milton, Georgetown, Beeton, Barrie.
18. Beeton to Collingwood.
19. Barrie to Penetang.
20. Toronto to Port Hope :—Toronto, Blackwater, Lindsay, Peterboro, Port Hope.
21. Blackwater to Midland : — Blackwater, Orillia, Midland.
22. Peterboro to Belleville :—Peterboro, Hastings, Campbellford, Belleville (with a short branch to Madoc).
23. Lindsay to Haliburton :—Lindsay, Fenelon Falls, Haliburton.
24. Lindsay to Coboconk :—Lindsay, Lorneville, Coboconk.
25. Whitby to Manilla Junction, near Lindsay.
26. Stouffville to Sutton, on Lake Simcoe.
27. Richmond, Que., to Levis.

NOTE.—The above may be made use of for the third, fourth, and fifth classes. In taking up the study of these roads, the main line and two or three leading branches should be sufficient for the third class ; for the fourth, several other branches may be added ; for the fifth, we think nearly all lines should be studied.—EDITOR.

## Drawing.

BY A. C. CASSELMAN (NORMAL SCHOOL, TORONTO).

There are many objects that are similar to the cube, and the principles of representing them are the same. Such objects are boxes, books, tables, chairs, benches, houses, and yards. These objects will be shown in future issues in examination papers.

This issue the pyramid and triangular prism are shown.

The most important pyramid is the right square pyramid, shown in Fig. 1 in two positions. The base is a square. The apex is in the axis, which is

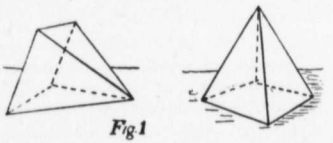

*Fig. 1*

drawn at right angles to the base from its centre. Draw the square base first. Locate its centre ; draw the axis ; and join the apex to the angles of the base.

The triangular prism, Fig. 2, is easily drawn. Draw the base first, then the vertical dotted lines from a point on each end a little beyond the apparent middle of the ends. Why? Draw the top edge so that it will converge at the same point as the sides of the base. Add the remaining lines. Draw from the object the pyramid, the frustum of the pyramid, and the triangular prism in many

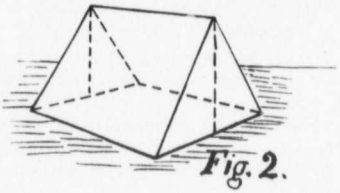

*Fig. 2.*

positions. The roof of a house is drawn precisely as the prism. A fruit basket and many other objects are like the frustum of a pyramid.

Make a pattern of (or develop the surface of) the pyramid and the triangular prism. Fold these up to form the objects, and use them as models.

QUESTIONS.

Answers in next issue.

1. What is (*a*) constructive drawing ? (*b*) representative drawing ? (*c*) decorative drawing ?

2. Make a working drawing (constructive drawing), any scale, of a right-angled triangular prism placed vertically with the broad face towards the observer. (Three views.)

3. (*a*) Represent an oblong tablet placed horizontally from left to right below the level of the eye and at the left. (*b*) Repeat the drawing in (*a*) and add lines to develop an envelope.

4. Of what class of forms may the cube be regarded as the basis?

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A useful book for teachers at this time of the year is "The Questions and Answers in Drawing given at the Uniform Examinations of the State of New York since June, 1892."

The questions in this little book are on the type solids in the two branches of drawing, constructive and representative. Decorative drawing is also treated of, and many questions on color study are found.

The book is published by C. W. Bardeen, Syracuse, N.Y.

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