

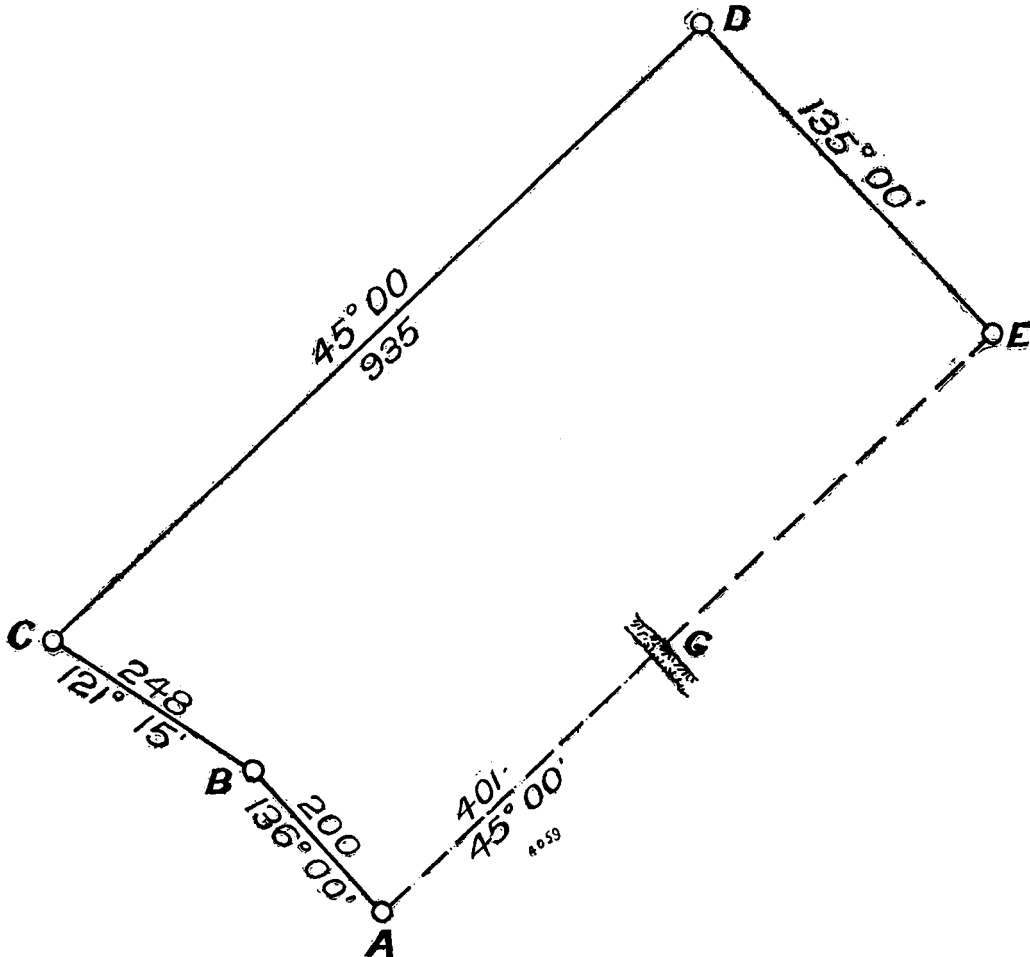
SUBJECT 7.—*Geology, Surveying, and Making Plans.*

1. What is the general character and approximate age of the series of rocks which includes most of the important coal-seams of New Zealand? Mention the chief localities in New Zealand where seams of coal occur.

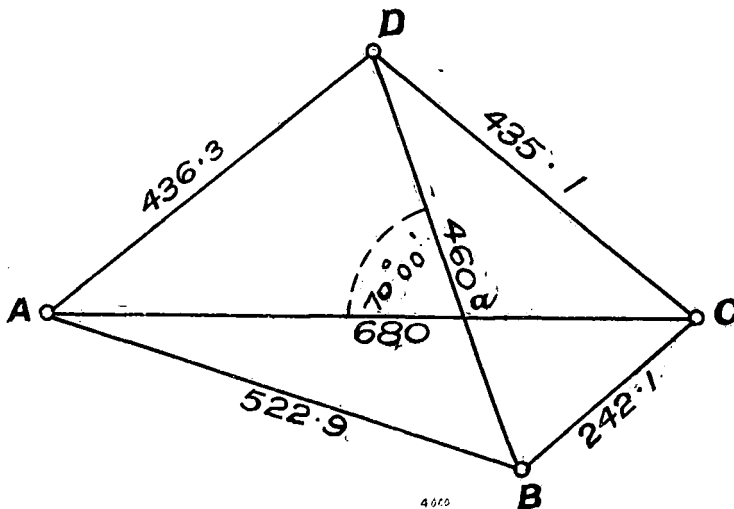
2. What gases are usually met with in coal-mines, and how are they formed? Define "fire-clay," "downthrow," "overlap," "dip," "stratification," and "crush."

3. The sketch represents portion of a mining claim (on which the underground workings are shown by dotted lines): find the distance, in feet and decimals, from the working-face at G to the boundary of claim at E, and also DE.

*Note.*—All distances on sketch are in links.



4. From data given, compute the area of the figure ABCD (by any method except scaling or planimeter).



5. Find the solid content, in cubic feet, of a cube of coal each of whose sides equals 120 in.