

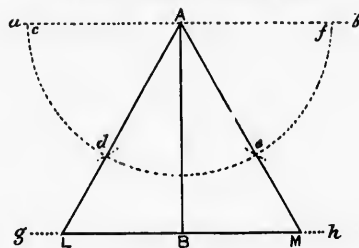
CONSTRUCT
C.

oting the sides
ares cd , hg ;
equal to the
 DEL will be

TO DRAW A
H A GIVEN

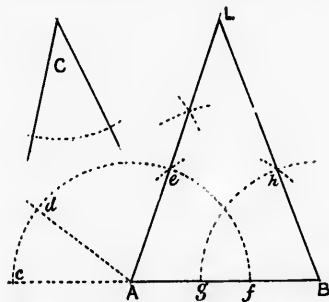
meeting AB

PROBLEM 13.—TO CONSTRUCT AN EQUILATERAL TRIANGLE HAVING
A GIVEN VERTICAL HEIGHT AB .



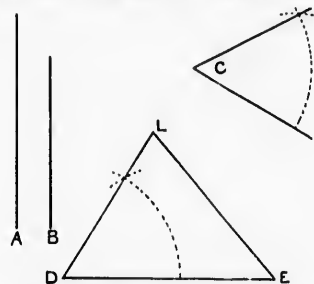
Through the points A and B draw lines ab and gh perpendicular to AB . (Prob. 4). About A with any radius, describe a semicircle and trisect it by the chords fe , ed , de , equal to radius. Join Ae , Ae , and produce them to meet the line gh in L and M . ALM will be the required equilateral triangle.

PROBLEM 14.—TO CONSTRUCT AN ISOSCELES TRIANGLE UPON A
GIVEN BASE AB , WITH A GIVEN VERTICAL ANGLE C .



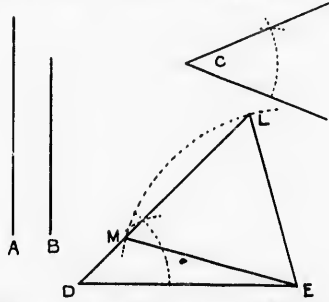
Produce the base BA and construct an angle cAd equal to the given angle C . (Prob. 11). Bisect the angle dAB by the line ae (Prob. 2). At B make an angle gBh equal to eAf and produce Ae , Bh , to meet in L . ABL will be the required isosceles triangle.

PROBLEM 15.—TO CONSTRUCT A TRIANGLE HAVING TWO SIDES
EQUAL RESPECTIVELY TO THE GIVEN LINES A AND B , AND THE
ANGLE BETWEEN THEM EQUAL TO THE GIVEN ANGLE C .



Draw the line DE equal to A and at D make an angle equal to C . Make DL equal to B and join LE . The triangle DLE will be the required triangle.

PROBLEM 16.—TO CONSTRUCT A TRIANGLE HAVING TWO SIDES
EQUAL RESPECTIVELY TO A AND B , AND AN ANGLE EQUAL TO
THE GIVEN ANGLE C , SITUATED OPPOSITE TO ONE OF THE GIVEN
SIDES.



Draw the line DE equal to A and at D make an angle EDL equal to the given angle C . From E as a centre describe an arc with a radius equal to B . If this arc cuts the line DL in two points M and L , the two triangles DME , DLE , will fulfill the conditions of the problem. If the arc merely touches the line DL , there is but one solution, and if the radius is too short to reach the line, the case is an impossible one.