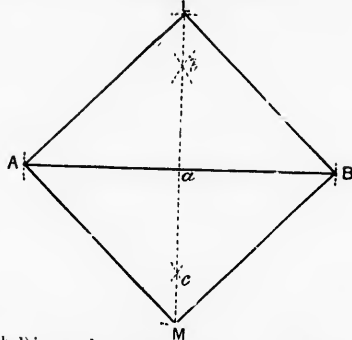
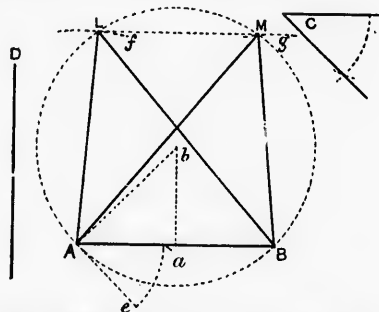


PROBLEM 24.—UPON A GIVEN LINE AB AS A DIAGONAL, TO
CONSTRUCT A SQUARE.



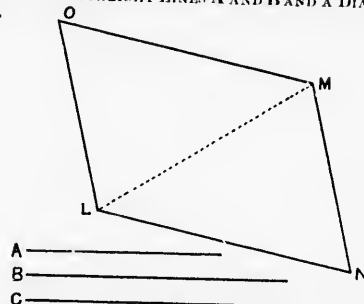
Bisect AB (Prob. 1) in a , and at a erect the perpendicular bae .
Make al , and am equal to aa and ab .
Join Al , lB , Bm , MA , to form the required square $AlBm$.

PROBLEM 25.—UPON A GIVEN BASE AB TO CONSTRUCT A TRIANGLE HAVING A GIVEN VERTICAL ANGLE C , AND A GIVEN ALTITUDE D .



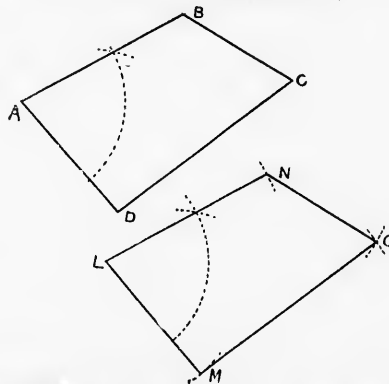
At **A** make the angle **BAC** equal to **C** (Prob. 11). Bisect **AB** in **n**.
From the points **n** and **A** erect perpendiculars to **AB** and **Ac** respectively, meeting in **D**.
From **n** as centre, with radius **BA**, describe a circle **LAMB**.
Draw the line **fg** (Prob. 7) parallel to **AB** and at the given distance **D** from it, meeting the circle in **L** and **M**.
The triangles **ABL** and **ABM** will have vertical angles equal to **C** and the required altitude **D**.

PROBLEM 26.--To CONSTRUCT A PARALLELOGRAM HAVING SIDES EQUAL TO THE STRAIGHT LINES A AND B AND A DIAGONAL EQUAL TO C.



Make **L M** equal to **C**, and from **L** and **M** as centres with radii equal respectively to **A** and **B**, describe arcs meeting in **O**. Join **O L**, **O M**. Then on the other side of **L M**, from the same centres with radii equal respectively to **B** and **A**, describe arcs meeting in **N**. Join **M N**, **L N**, completing the required parallelogram **L O M N**.

PROBLEM 27.—To CONSTRUCT A TRAPEZIUM SIMILAR AND EQUAL TO ANOTHER TRAPEZIUM $ABCD$.



Make an angle $\angle \text{NLM}$ equal to $\angle \text{BAD}$ (Prob. 11) and having the containing sides NL , LM , equal to $\frac{1}{2} \text{A}$, $\frac{1}{2} \text{D}$, respectively.
From the centres N and M , with radii equal respectively to BC and DC , describe arcs meeting in O .
Join the point O to M and N . LMON will be the required trapezium,