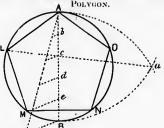
PROBLEM 61.-To Inscribe in a given Circle any Regular



Let it be required to inscribe a pentagon

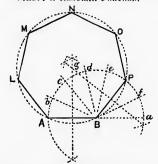
Draw any diameter A B and divide it into as many equal parts as the required figure bas sides.

From A and B as centres, with radius A B, describe ares meetinglin a.

Join a to c, the second point from A on the divided diameter, and produce the line to meet the circumference in L.

Measure chords equal to AL, dividing the circle into five equal parts, and join the points.

PROBLEM 62.—Upon a Given Straight Line A B to Construct a Regular Polygon.



Let it be required to construct a regular heptagon.

Produce AB, making Ba equal to AB, and describe a semicircle on Aa. Divide the semicircle into seven equal parts (Prob. 61) in f, P. e, etc.

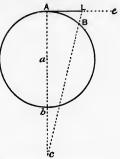
Join B to P the second point from a.

Find the centre of the circle passing through A B P and describe the circle.

Measure arcs equal to AB or BP, from P. These will divide the circle into seven equal parts, forming the required polygon.

The points L. M. N. O. should be on the lines drawn from B through b, c, d, and e, the points os division of the circle A P a.

PROBLEM 63.—To Draw a Straight Line which shall be Approximately Equal to any Given Arc A B of a Chicle.



Find a the centre of the circle.

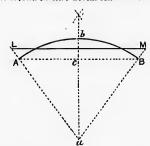
Join Aa and produce it, making a c equal to twice Aa.

Draw Ac percendicular to Aa.

Join c to B and produce the line to meet A c in L,

The straight line A L will be approximately equal in length to the arc A B.

PROBLEM 63 (a).—To Draw a Straight Line which shall be Approximately Equal to any Given Arc A B (Second Method).



Find the centre a of the circle. Bisect the arc in b and join b to a. Join A B, cutting a b in c.

Bisect be, and through the point of bisection draw a line parallel to AB and meeting a A, a P, in L and M.

M L will be the required straight line.

PR

Drav Upo

Fro

PR

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The