

PART III.

CHAPTER I.

EXERCISES ON LOCI.

1. Construct the locus of a point such that the $\perp$ s from it to two intersecting st. lines are in the ratio of two given line-segments.

2. A fixed point O is joined to any point A on a given st. line which does not pass through O . P is a point on OA such that the ratio of OP to OA is constant. Find the locus of P .

3. A fixed point O is joined to any point A on the circumference of a given circle, P is a point on OA such that the ratio of OP to OA is constant. Find the locus of P .

Find the locus when P is on AO produced.

4. A fixed point O is joined to any point A on a given st. line which does not pass through O . P is a point on OA such that the rect. $OP.OA$ is constant. Show that the locus of P is a circle.

Find the locus when P is on AO produced.

5. Through a fixed point O within an $\angle YXZ$ draw a line-segment MON , terminated in the arms of the $\angle$, and such that the rect. $OM.ON$ has a given area.

6. Find the locus of a point such that the sum of the squares on its distances from the arms of a given rt. $\angle$ is equal to the square on a given line-segment.