Proof – 2022 GCE Pure Core 2 Further Math A Y541

1. June/2022/Paper_ Y541/01/No.2
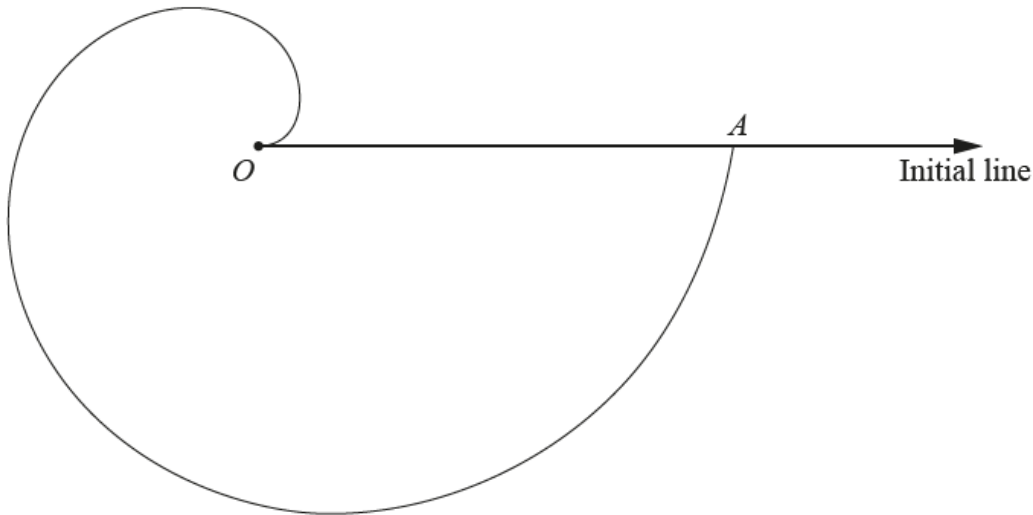
   Two polar curves, C_1 and C_2, are defined by $C_1:r = 2\theta$ and $C_2:r = \theta+1$ where $0 \leqslant \theta \leqslant 2\pi$.

   C_1 intersects the initial line at two points, the pole and the point A.

   (a) Write down the polar coordinates of A. [2]

   (b) Determine the polar coordinates of the point of intersection of C_1 and C_2. [2]

   The diagram below shows a sketch of C_1.

   (c) On the copy of this sketch in the Printed Answer Booklet, sketch C_2. [1]