Polar Curves - Exercises (1 page; 12/8/19)

(1) Convert the curve $(x - 1)^2 + y^2 = 1$ to polar form.

(2) Convert the curve $r = \dfrac{2}{1+cos\theta}$ to cartesian form, and sketch the curve, based on its cartesian form.

(3)(i) Sketch the curve $r = 5 + 4cos\theta$.

(ii) Without converting the curve to cartesian form, find the greatest negative x-coordinate of a point on the curve.

(iii) Determine the area enclosed by the curve.

(4)(i) Sketch the curve $r^2 = sin2\theta$.

(ii) Show how to sketch the curve $r^2 = cos2\theta$ by applying a transformation to $r^2 = sin2\theta$.

(iii) Find the largest y-coordinate of the curve $r^2 = sin2\theta$.