M1B/Schoenbrun Section H.1 H.2 Polar Coordinates

Calculate the area enclosed by

1) $r = \cos(3\theta), \quad -\pi/6 \le \theta \le \pi/6$

2) $r = \tan(2\theta), \quad 0 \le \theta \le \pi/8$

3) $r = 1 + \cos(\theta), r = \cos(\theta), 0 \le \theta \le \pi$

4) Find the length of the curve $r = \theta, \quad 0 \le \theta \le 2\pi$

5) Use your calculator to find the length of the curve $r = 3\sin(2\theta)$