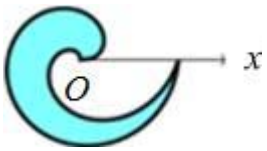
10.4 Areas and Lengths in Polar Coordinates

◎ 填空題

1. The **area** of the region bounded by $r = \left(\frac{\theta}{2\pi}\right)^2$ and $r = \sqrt{\frac{\theta}{2\pi}}$ with $0 \le \theta \le 2\pi$ is _____



Ans: $\frac{3}{10}\pi$ [103 學年度]

2. The **length** of the curve $r = \cos^3\left(\frac{\theta}{3}\right)$, $0 \le \theta \le \frac{\pi}{4}$, is _____.

Ans: $\frac{3+\pi}{8}$ [104 學年度]

3. The **area** of the region that lies inside both curves $r = 3\sin\theta$ and $r = 1 + \sin\theta$ is _____.

Ans: $\frac{5}{4}\pi$ [105 學年度]