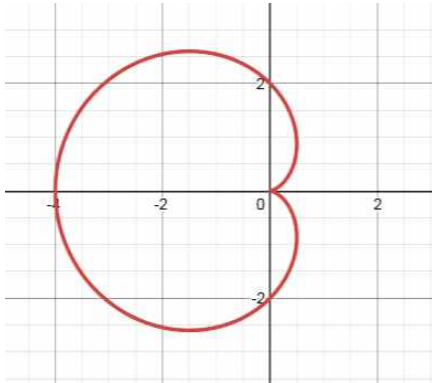


10.5 | 연습문제 정답

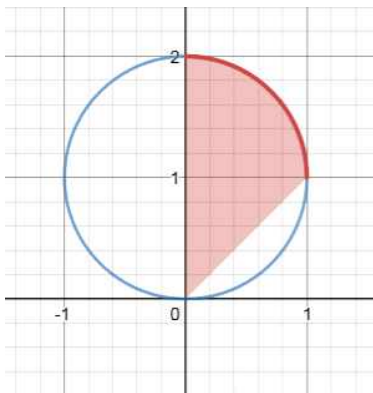
01.

$$r = 2 - 2\cos\theta, \quad 0 \leq \theta \leq 2\pi$$



$$(a) \quad L = \int_0^{2\pi} \sqrt{(2 - 2\cos\theta)^2 + (2\sin\theta)^2} d\theta = 16$$

$$r = 2\sin\theta, \quad \frac{\pi}{4} \leq \theta \leq \frac{\pi}{2}$$



$$(b) \quad L = \int_{\frac{\pi}{4}}^{\frac{\pi}{2}} \sqrt{(2\sin\theta)^2 + (2\cos\theta)^2} d\theta = \frac{\pi}{2}$$

02. $\frac{a}{2} [\pi\sqrt{1+\pi^2} + \ln(\pi + \sqrt{1+\pi^2})]$

03. 24

04. 4π

05. $4\pi + 12\sqrt{3}$

06. 5

07. 2

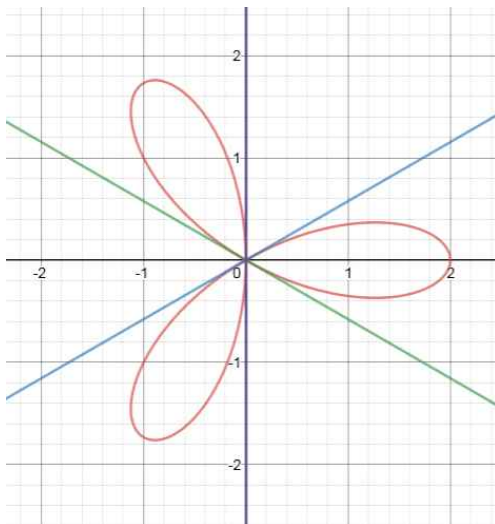
08. 12π

09. $\frac{5}{4}\pi - \frac{9}{8}\sqrt{3}$

10. $A = 4\pi + 12\sqrt{3}$, 기울기 : $2\sqrt{2} - 1$

11. $\theta = \frac{\pi}{3}$ 에서의 접선의 기울기 : -1 , 극에서의 접선의 방정식 : $\theta = \frac{3\pi}{2}$

12.



극에서의 접선의 방정식 :

$$\theta = \frac{\pi}{6}, \frac{\pi}{2}, \frac{5\pi}{6}$$

13. $x = 0$

14. 생략

15. $\frac{128}{5}\pi$