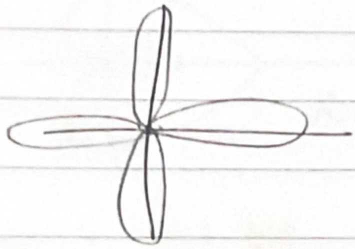
10.13. 金.
기하수 2

#11.4.4(3)

$2c^2-1 = \frac{1+c\cdot 2}{2}$



$$\frac{dy}{dx} = \frac{\frac{dy}{d\theta}}{\frac{dx}{d\theta}}$$

$$= \frac{\frac{d}{d\theta}(\cos 2\theta \cdot \sin\theta)}{\frac{d}{d\theta}(\cos 2\theta \cdot \cos\theta)}$$

$$= \frac{-\sin 2\theta \cdot 2\sin\theta + \cos 2\theta \cdot \cos\theta}{-\sin 2\theta \cdot 2\cos\theta - \cos 2\theta \cdot \sin\theta} = \frac{\cos\theta(-6\sin^2\theta+1)}{\sin\theta(6\sin^2\theta-5)}$$

$$\frac{-4sc\cdot s + (c^2-s^2)c}{-4sc\cdot c - (c^2-s^2)s}$$

$$= \frac{-4s^2c + c^3 - s^2c}{-4sc^2 - c^2s + s^3}$$

$$= \frac{-5s^2c + c^3}{-5sc^2 + s^3} = \frac{c(-5s^2+c^2)}{s(-5c^2+s^2)}$$

$$= \frac{c(-5s^2+1-s^2)}{s(-5+5s^2+s^2)}$$

$$= \frac{c(-6s^2+1)}{s(6s^2-5)}$$

$(\cos 2\theta \times \sin\theta, \cos 2\theta \cdot \cos\theta) = (0,0)$인 $\theta = \frac{1}{4}\pi$.

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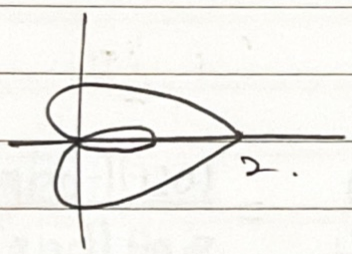
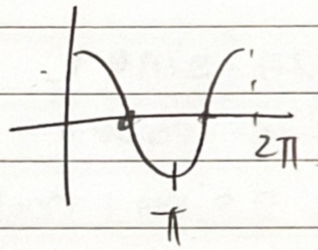
$\theta = \frac{1}{4}\pi.$ $\dfrac{\cancel{\frac{\sqrt{2}}{2}}\left(-6\cdot\frac{1}{2}+1\right)}{\cancel{\frac{\sqrt{2}}{2}}\left(6\cdot\frac{1}{2}-5\right)}.$

$= \dfrac{-3+1.}{3-5.}$

$= \dfrac{-2.}{-2} = 1.$ $\therefore$ 기울기 $= 1.$ $\therefore y = x$

#11.5.2(4)





$-2\cdot\int_{\frac{1}{2}\pi}^{\pi} \frac{1}{2} r^2 \, d\theta.$

$= -\int_{\frac{1}{2}\pi}^{\pi} (4\cos^2\theta + 4\cos\theta + 1)\, d\theta$

$= -\int_{\frac{1}{2}\pi}^{\pi} (2 + 2\cos\theta + 4\cos\theta + 1)\, d\theta$

$= -\int_{\frac{1}{2}\pi}^{\pi} (6\cos\theta + 3)\, d\theta$

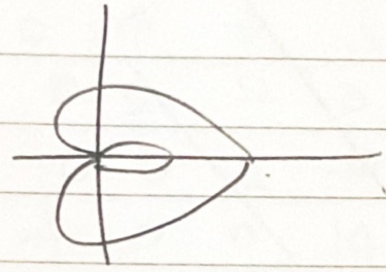
$= -\left[6\sin\theta + 3\theta\right]_{\frac{1}{2}\pi}^{\pi}$

$= -\{6(0-1) + 3\cdot\frac{1}{2}\pi).$

$= -(6 + \frac{3}{2}\pi)$ $= \ominus 6 \oplus \frac{3}{2}\pi.$ $\therefore \cancel{-6 + \frac{3}{2}\pi}.$

$\therefore 6 - \frac{3}{2}\pi$

#11.5.3.(5)



넓이 $= 6 - \frac{3}{2}\pi$.

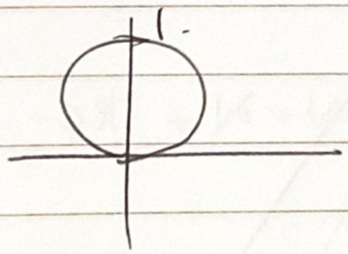
넓이 $= 2 \cdot \int_0^{\pi} \frac{1}{2} r^2 \, d\theta$.

$= \int_0^{\pi} r^2 \, d\theta$

$= \left[6\sin\theta + 3\theta \right]_0^{\pi} = 3\pi$. $\quad \therefore 6 + \frac{3}{2}\pi$

#11.5.4(ㄷ)

$r = \sin\theta$



$r = \sin\theta$ 는 중심이 $(0, \frac{1}{2})$, 반지름이 $r = \frac{1}{2}$ 인 원

$\therefore \cancel{2}\pi \cdot \frac{1}{\cancel{2}} = \pi$.