HW 8.5

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$r = \frac{1}{\theta} \qquad \theta = \pi$

$x = r\cos\theta$

$x = \frac{1}{\theta}\cos\theta = \frac{\cos\theta}{\theta}$

$y = \frac{\sin\theta}{\theta}$

$$\frac{\frac{dy}{d\theta}}{\frac{dx}{d\theta}} = \frac{\frac{\theta\cos\theta - \sin\theta}{\theta^2}}{\frac{\theta(-\sin\theta) - \cos\theta}{\theta^2}}$$

$$= \frac{\pi\cos\pi - \sin\pi}{-\pi\sin\pi - \cos\pi}$$

$$= \frac{-\pi}{+1} = \boxed{-\pi}$$