



Question

Compute the Jacobian $\left| \frac{\partial(x, y)}{\partial(r, \theta)} \right|$ of the transformation $x = r \cos \theta$, $y = r \sin \theta$.

- A. r
- B. r^2
- C. $r(\cos^2 \theta - \sin^2 \theta)$
- D. $r^2(\cos^2 \theta - \sin^2 \theta)$