

Question 50

$$I = \int_0^{2\pi} \int_0^{\sin x} f(x, y) \, dy \, dx.$$

Write an expression for I , by reversing the order of integration.

$$I = \left\{ \int_0^1 \int_{\arcsin y}^{\frac{\pi}{2}} + \int_0^1 \int_{\frac{\pi}{2}}^{\pi - \arcsin y} + \int_0^{-1} \int_{\pi - \arcsin y}^{\frac{3\pi}{2}} + \int_0^{-1} \int_{\frac{3\pi}{2}}^{2\pi - \arcsin y} \right\} f(x, y) \, dx \, dy$$

