41 MVT

- f cont on $[0, \pi/4]$
- f diff on $[0, \pi/4)$

$$f'(c) = \frac{f(b) - f(a)}{b - a}$$

$$f'(x) = \cos(3x) \cdot 3$$

$$\frac{f(b) - f(a)}{b - a} = \frac{\sin\left(\frac{3\pi}{4}\right) - \sin^{0}(3(0))}{\frac{\pi}{4} - 0} = \frac{\frac{\sqrt{2}}{2} - 0}{\frac{\pi}{4}} = \frac{\sqrt{2}}{2} \cdot \frac{4}{\pi} = \frac{2\sqrt{2}}{\pi}$$

$$3\cos(3x) = \frac{2\sqrt{2}}{3\pi}$$

$$\frac{3x}{3} = \frac{\cos^{-1}\left(\frac{2\sqrt{2}}{3\pi}\right)}{3}$$

$$x = \frac{\cos^{-1}\left(\frac{2\sqrt{2}}{3\pi}\right)}{3}$$