

$$\textcircled{5} \quad \lim_{x \rightarrow 0} \sqrt{\frac{x - \sin x}{x + \cos^2 x}}$$

$$= \frac{\lim_{x \rightarrow 0} (x - \sin x)^{1/2}}{\lim_{x \rightarrow 0} (x + \cos^2 x)^{1/2}}$$

$$= \frac{\lim_{x \rightarrow 0} \left[x \left(1 - \frac{\sin x}{x} \right) \right]^{1/2}}{\lim_{x \rightarrow 0} (0 + 1)^{1/2}}$$

$$= \frac{0}{1}$$

$$= 0$$

$$\checkmark \textcircled{0}$$

a) 1

d) 3

c) 2