

$$\lim_{x \rightarrow 0} \frac{e^x - e}{x - \sin x} = \frac{e^0 - e}{0 - \sin 0} = \frac{1 - e}{0} = \infty$$

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

$$= \lim_{x \rightarrow 0} \frac{e^x (-1)}{x - \sin x} = \lim_{x \rightarrow 0} \frac{-e^x}{x - \sin x} = \frac{-e^0}{0 - \sin 0} = \frac{-1}{0} = \infty$$

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

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

$$= e^0 \cdot 1 \cdot \frac{1}{6} = \frac{1}{6}$$

$$= \lim_{x \rightarrow 0} \frac{e^x - \sin x}{x - \sin x} = \frac{e^0 - \sin 0}{0 - \sin 0} = \frac{1 - 0}{0} = \infty$$

$$= \lim_{x \rightarrow 0} \frac{e^x - \cos x}{x - \sin x} = \frac{e^0 - \cos 0}{0 - \sin 0} = \frac{1 - 1}{0} = \frac{0}{0}$$

$$= \lim_{x \rightarrow 0} \frac{e^x + \sin x}{x - \sin x} = \frac{e^0 + \sin 0}{0 - \sin 0} = \frac{1 + 0}{0} = \infty$$

$$= \lim_{x \rightarrow 0} \frac{e^x + \cos x}{x - \sin x} = \frac{e^0 + \cos 0}{0 - \sin 0} = \frac{1 + 1}{0} = \infty$$

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$$\lim_{x \rightarrow 0} \frac{x - \sin x}{x^3} = \lim_{x \rightarrow 0} \frac{1 - \cos x}{3x^2} = \frac{1 - 1}{3 \cdot 0} = \frac{0}{0}$$

$$= \lim_{x \rightarrow 0} \frac{0 + \sin x}{6x} = \frac{0 + \sin 0}{6 \cdot 0} = \frac{0}{0}$$

$$= \lim_{x \rightarrow 0} \frac{\cos x}{6} = \frac{\cos 0}{6} = \frac{1}{6}$$