just got the solution:

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1) solution.JPG, downloaded 458 times

$$\lim_{x \to 0} \frac{\sin 5x}{2 - 2\cos x}$$

$$\lim_{x \to 0} \frac{\sin 5x}{2(1 - \cos x)} \qquad \cos x = 1 - 2\sin^2(x/2)$$
$$1 - \cos x = 2\sin^2(x/2)$$

$$\lim_{x \to 0} \frac{\sin 5x}{4\sin^2(x/2)} \qquad \text{(eqn. 1)}$$

$$\lim_{x \to 0} \frac{\dfrac{5\sin 5x}{5x}}{\dfrac{\sin^2(x/2)}{(x/2)^2} \, x} \qquad \text{(when simplified, we have eqn.1)}$$

$$\lim_{x \to 0} \frac{5}{x} = \text{infinity}$$