
Subject: Re: Math Question #1

Posted by [archerman](#) on Tue, 11 Nov 2008 09:11:23 GMT

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just got the solution:

File Attachments

1) [solution.JPG](#), downloaded 759 times

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

$$\lim_{x \rightarrow 0} \frac{\sin 5x}{2(1-\cos x)} \quad \begin{aligned} \cos x &= 1-2\sin^2(x/2) \\ 1-\cos x &= 2\sin^2(x/2) \end{aligned}$$

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

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

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