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### 3.1

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Author	Message
<p><b>oula-khouzam</b></p> <p> offline S.O.S. Newbie</p> <p><b>Joined:</b> Tue, 31 Mar 2020 17:23 <b>Posts:</b> 4</p> <p><a href="#">Top</a></p>	<p><b>Post subject:</b> 3.1 <span style="float: right;"> <b>Posted:</b> Thu, 02 Apr 2020 10:02</span></p> <p>My answer is : Yes <math>F(x)</math> has limit when <math>x \rightarrow 0</math> and the limit is 0. if I you want me to proof that, please let me know 😊</p> <p style="text-align: right;"> </p> <p><a href="#">profile</a> <a href="#">pm</a> <a href="#">email</a> <a href="#">edit</a> <a href="#">quote</a></p>
<p><b>Jocelyne Perez</b></p> <p> offline Math Cadet</p> <p><b>Joined:</b> Tue, 31 Mar 2020 15:27 <b>Posts:</b> 6</p> <p><a href="#">Top</a></p>	<p><b>Post subject:</b> Re: 3.1 <span style="float: right;"> <b>Posted:</b> Thu, 02 Apr 2020 14:04</span></p> <p>We can see from the figure that the left and right side, the function tends to 0. if you have a better way of proving this it will be very helpful. Thank you!</p> <p style="text-align: right;"> </p> <p><a href="#">profile</a> <a href="#">pm</a> <a href="#">email</a> <a href="#">edit</a> <a href="#">quote</a></p>
<p><b>oula-khouzam</b></p> <p> offline S.O.S. Newbie</p> <p><b>Joined:</b> Tue, 31 Mar 2020 17:23 <b>Posts:</b> 4</p>	<p><b>Post subject:</b> Re: 3.1 <span style="float: right;"> <b>Posted:</b> Fri, 03 Apr 2020 12:24</span></p> <p>since the question didn't ask to proof it, I tried to skip that part 😊. But I will do it for you 😊</p> <p>by the limit def. what we have to do is to proof that:  <math display="block">\forall \epsilon &gt; 0, \exists \delta \text{ such that }  f(x) - L  &lt; \epsilon \text{ whenever } 0 &lt;  x - x_0  &lt; \delta \text{ and } x \in D</math> </p> <p>in this case <math>L=0, x_0=0, F(x)=x\sin(1/x)</math> if <math>x</math> is not <math>= 0, x \in \mathbb{R}</math>            Now let <math>\epsilon &gt; 0</math>, suppose <math>0 &lt;  x - 0  &lt; \delta</math> and assume that <math>\delta = \epsilon</math>            so we can write <math>0 &lt;  x  &lt; \epsilon</math>, now we all know that <math> x\sin(1/x)  \leq  x </math> since <math> \sin(1/x)  \leq 1</math>            so <math> x\sin(1/x)  &lt; \epsilon \Rightarrow  x\sin(1/x) - 0  &lt; \epsilon</math> for all <math>x \in \mathbb{R}</math> and <math> x - 0  &lt; \delta</math></p> <p>Done.</p>

		! ? [no] [x]
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<b>Jocelyne Perez</b>	<b>Post subject:</b> Re: 3.1	<b>Posted:</b> Sat, 04 Apr 2020 14:40
<a href="#">offline</a> Math Cadet  <b>Joined:</b> Tue, 31 Mar 2020 15:27 <b>Posts:</b> 6	Thank you. I appreciate it.	! ? [no] [x]
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<b>helmut</b>	<b>Post subject:</b> Re: 3.1	<b>Posted:</b> Sun, 05 Apr 2020 16:30
<a href="#">online</a> Site Admin    <b>Joined:</b> Sat, 26 Apr 2003 15:14 <b>Posts:</b> 2220 <b>Location:</b> El Paso TX (USA)	Correct. 1 credit to Oula. 😊  If you want to continue the discussion, start a new topic in "Questions" with the same title.  <hr/> <p style="color: red;">The greater danger for most of us lies not in setting our aim too high and falling short; but in setting our aim too low, and achieving our mark. - Michelangelo Buonarroti</p>	! ? [x]
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