

Answer on Question #85535 - Programming & Computer Science / MatLAB | Mathematica | MathCAD | Maple

Question: I'm trying to evaluate the limit :::::

$\text{Limit}[(\sqrt{t^2 + 9} - 3)/(t^2), t \rightarrow 0]$

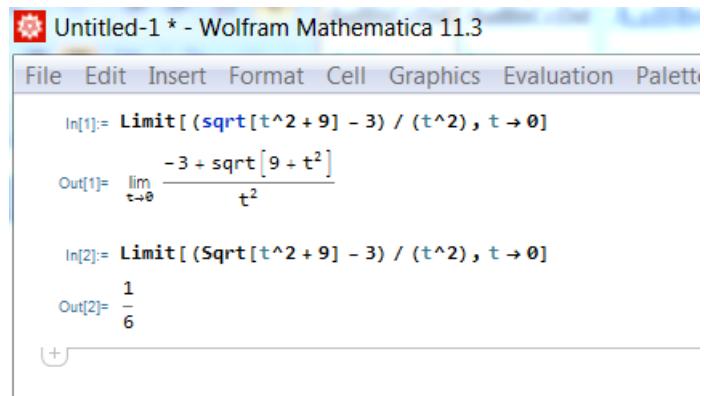
When i click "evaluate cell" Mathematica outputs :::::

```
!(*UnderscriptBox[Limit[0], t Rule 0]])(-3 +  
sqrt[9 + t^2])/t^2
```

which is the same thing as what I typed in only in a slightly different order (essentially the same thing i typed in) what am i doing wrong ?

Answer:

One should take into account that all built-in mathematical functions in Wolfram Mathematica start with a capital letter. Thus, changing "sqrt" to "Sqrt" completely solves the problem (see the screenshot below).



```
Untitled-1 * - Wolfram Mathematica 11.3
File Edit Insert Format Cell Graphics Evaluation Palettes
In[1]:= Limit[(sqrt[t^2 + 9] - 3)/(t^2), t -> 0]
Out[1]= 
$$\lim_{t \rightarrow 0} \frac{-3 + \sqrt{9 + t^2}}{t^2}$$

In[2]:= Limit[(Sqrt[t^2 + 9] - 3)/(t^2), t -> 0]
Out[2]= 
$$\frac{1}{6}$$

```