

"QUIZ" for Lecture 6

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E-MAIL SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com (Attachment: q6FirstLast.pdf) ASAP BUT NO LATER THAN Sept. 24, 8:00pm

1. Find the limit if it exists, or show that the limit does not exist.

$$\lim_{(x,y) \rightarrow (0,0)} \frac{2x}{2x+3y} = \frac{2(0)}{2(0)+3(0)} = \frac{0}{0} \quad \text{Useless}$$

∴ Check $y=cx$:

$$\lim_{x \rightarrow 0} \frac{2x}{2x+3cx} = \lim_{x \rightarrow 0} \frac{2}{2+3c}$$

Limit DNE b/c it changes depending on the line on which you approach (0,0)

2. Find the limit if it exists, or show that the limit does not exist.

$$\lim_{(x,y) \rightarrow (0,0)} \frac{x^5}{x^2+y^2} = \frac{0}{0+0} = \frac{0}{0} \quad \text{X}$$

Check $y=cx$: $\lim_{(x) \rightarrow 0} \frac{x^5}{x^2+c^2x^2} \Rightarrow \lim_{x \rightarrow 0} \frac{x^3}{c^2} = 0$

L=0