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**"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.

$$\lim_{(x,y)\to(0,0)} \frac{2x}{2x+3y} \quad .$$

$$\lim_{(x,y)\to(0,0)} \frac{2x}{2x+3y} = \lim_{(x,y)\to(0,0)} \frac{2x}{2x+3mx}$$

$$y = mx$$

limit doesnt exist because the limit depends on m, the xy slope of the line $y=mx$.

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

$$\lim_{(x,y)\to(0,0)} \frac{x^5}{x^2+y^2} \quad .$$

$$\lim_{x,y\to(0,0)} \frac{x^5}{x^2+y^2} = \lim_{(x,y)\to(0,0)} \frac{x^5}{x^2+m^2x^2} \Rightarrow DNE$$

$$y = mx$$

because the limit depends on m .