

Problem of the Week-5: A Limit Rule

Determine whether the following statement is true.

Proposition: If f and g are real valued functions that are differentiable on \mathbb{R} and if $\lim_{x \rightarrow \infty} f(x) = \lim_{x \rightarrow \infty} g(x) = \infty$ then

$$\lim_{x \rightarrow \infty} \frac{f(x)}{g(x)} = \lim_{x \rightarrow \infty} \frac{f'(x)}{g'(x)}$$

As always, show your work, fully explain and justify your answer.

Posting Date 3/16/15. Submit solutions to Noah Aydin, Mathematics Department, RBH 319 (e-mail or hard-copy, but hard copy submissions must include a time stamp) by 5 pm on 3/27/15.