# Quiz 4.3 – Continuity and L'Hôpital's Rule

**1. (1 pt) alfredLibrary/AUCI/chapter4/lesson3/quiz/question1.pg**

True or False (note that you have a limited number of attempts):

? If $f$ is continuous at $x = 2$, then $f$ is differentiable at $x = 2$

? If $f$ is differentiable at $x = 2$, then $f$ is continuous at $x = 2$.

? If $f$ is continuous at $x = 2$, then $\lim_{x \to 2} f(x) = f(2)$

**2. (1 pt) alfredLibrary/AUCI/chapter4/lesson3/quiz/question2pet.pg**

True or False (note that you have a limited number of attempts):

? L'Hospital's Rule can be used for the limit of any rational function.

? L'Hospital's Rule can only be used for indeterminate forms of the type $\frac{0}{0}$ or $\frac{\pm\infty}{\pm\infty}$.

? L'Hospital's Rule can be used to compute $\lim_{x \to -7} \frac{x^2+14x+48}{x^2+13x+42}$

? L'Hospital's Rule can be used to compute $\lim_{x \to -7} \frac{x^2+14x+49}{x^2+13x+42}$

**3. (1 pt) alfredLibrary/AUCI/chapter4/lesson3/quiz/lhopitals1pet.pg**

Suppose we want to know the behavior of the rational function $y = \frac{-3x^2+17x-10}{x-5}$ near $x = 5$ (there is a hole at that point). That is, suppose we want to find $\lim_{x \to 5} \frac{-3x^2+17x-10}{x-5}$. Use L'Hopital's rule to evaluate this limit:

$$\lim_{x \to 5} \frac{-3x^2+17x-10}{x-5} = \lim_{x \to 5} \frac{\quad}{\quad} = \quad .$$