KFUPM	Term 153	Date: 26/7/2016
Mathematics & Statistics	MATH 101	Duration: 20 minutes
	Quiz# 2	
Name:	ID #:	Section: 1 Serial #:

1. Using the definition find the equation of the tangent line of the function $f(x) = \frac{1}{x^3}$ at the point on the graph of f(x) with an *x*-coordinate of 1.

2. Evaluate the limit if it exists. If it does not exist, explain why: $\lim_{x \to -\infty} \frac{3x-9}{5x-\sqrt{x^2+2}}$

3. Determine the values of *a* and *b* such that the function is continuous at every *x*, where $f(x) = \begin{cases} x+1 & , \ 1 < x < 3 \\ x^2 + ax + b \\ x + 2 \end{cases}$ $|x-2| \ge 1$

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Name:	ID #:	Section: 3 Serial #:

1. Using the definition find the equation of the tangent line of the function f(x) = $\frac{x-1}{2x}$ at the point on the graph of f(x) with an *x*-coordinate of 2.

2. Evaluate the limit if it exists. If it does not exist, explain why: $\lim_{x \to -\frac{\pi}{2}} \frac{2x^2 - \pi x - \pi^2}{2x + \pi}$

3. Show that the two functions $f(x) = \ln x$ and $g(x) = e^{-x}$ intersect at a point whose *x*-coordinate lie in the interval [1, *e*].