King Fahd University of Petroleum and Minerals

Math 101 **Quiz # 6(a)** **Time: 20 minutes** **Date: 12-5-2015**

Name	ID #	Sr #	Sec. 13	Marks:

Q1. Find the following limits.

(i) $\lim_{x\to 0} \frac{x(1-\cos x)}{x-\sin x}$	(ii) $\lim_{x\to 0}(e^x + x)^{\frac{1}{x}}$

Q 2. Use Newton's method to find the positive fourth root of 2 by solving the equation $x^4 = 2$. Start with $x_0 = 1$ and find $x_1 - x_2$.

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Math 101 **Quiz # 6(b)** **Time: 20 minutes** **Date: 12-5-2015**

Name	ID #	Sr #	Sec. 13	Marks:

Q1. Find the following limits

(i) $\lim_{x\to\infty} \frac{ln(x+1)}{log_2 x}$	(ii)) $\lim_{x\to 0^+}(1+x)^{\frac{1}{x}}$

Q 2. Newton's method is used to estimate the x-coordinate of the point where the curve of $y = x^3 + 2x$ crosses the horizontal line $y = 2$. Start with $x_0 = 1$ and calculate x_1.

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Math 101 Quiz # 6(c) Time: 20 minutes Date: 12-5-2015

Name	ID #	Sr #	Sec. 12	Marks:

Q1. Find

(i) $\lim_{\theta\to 0}\frac{(1/2)^{\theta}-1}{\theta}$	(ii)) $\lim_{x\to\infty} x^{1/x}$

Q 2. Newton's method is used to estimate the x-coordinate of the point of intersection of the curves $y = \sin\left(x+\frac{\pi}{2}\right)$ and $y = ln(2x+1)$. Start with $x_0 = 0$ and calculate x_1.

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Math 101 Quiz # 6(d) Time: 20 minutes Date: 12-5-2015

Name	ID #	Sr #	Sec. 12	Marks:

Q1. Find the following limits

(i) $\lim_{\theta\to 0}\frac{(1/5)^{\theta}-1}{5\theta}$	(ii) $\lim_{x\to 0^+}(1+\sin 4x)^{\cot x}$

Q 2. Newton's method is used to estimate the x-coordinate of the point where the curve of $y = x^3 - x$ crosses the horizontal line $y = 1$. Start with $x_0 = 1$ and calculate x_1.