

Course No:
 Course Title: Calculus II
 Date: 27/11/2017
 No. of Questions: (3)
 Time: 1.00hour
 Using Calculator (yes)

University of Palestine



Second Mid. Exam
 2017/2018
 Total Grade:20

Instructor Name: Eng. Albaz
 Student No.: _____
 Student Name: _____
 College Name: _____
 Dep. / Specialist: _____
 Using Dictionary (No)

Question One: 5points

A) Choose the correct answer. 2pts

1) $\lim_{x \rightarrow \infty} e^x =$			
a) 1	b) ∞	c) 0	d) \emptyset
2) $\lim_{x \rightarrow 0} \ln(x) =$			
a) 0	b) ∞	c) $-\infty$	d) D.N.E
3) $\sin^{-1}\left(\frac{1}{\sqrt{2}}\right) =$			
a) $\frac{1}{\sec^{-1}\left(\frac{1}{\sqrt{2}}\right)}$	b) $\frac{1}{\csc^{-1}\left(\frac{1}{\sqrt{2}}\right)}$	c) $\sec^{-1}(\sqrt{2})$	d) $\csc^{-1}(\sqrt{2})$
4) If $f(x) = e^x$ and $g(x) = 4^x$, then $f(x)$ grows			
a) Faster than $g(x)$	b) slower than $g(x)$	c) at the same rate of $g(x)$	d) not mentioned

B) Solve the following limits.

1) $\lim_{x \rightarrow \infty} \left(1 + \frac{z}{x}\right)^x =$ **1.5 pts**

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2) $\lim_{x \rightarrow \infty} x e^{-x^2} =$

1.5 pts

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Question Two: 15 points

a) find the derivatives of the following:

1) $y = (\sinh(x))^{\sin^{-1}(e^{\cos(\frac{\pi}{2})})} + (e^{(\ln(\cos(0))+\ln(2))})^{\cos x}$

2pts

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2) $y = \cosh^{-1}(e^{\cos^{-1}(x)})$

2pts

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3) $y = \cos(x^{\sin x})$

2pts

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b) Evaluate the following integrals:

1) $\int \frac{1}{\sqrt{2x-x^2}} \frac{1}{\frac{\pi}{2} - \sin^{-1}(x-1)} dx$

2pts

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2) $\int (x^3 + 2x^2 - x + 1) e^{-x} dx$

2pts

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3) $\int_{-3}^2 \frac{1}{1 - (x + 2)^2} dx$

2pts

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c) Decide which of the following functions grows the fastest as $x \rightarrow \infty$?

3pts

$f(x) = e^{-x}$

$g(x) = \frac{1}{x}$

$h(x) = \ln\left(\frac{3x^2 + 1}{2 + 2x^2}\right)$

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