Course Code: ENGI 1302	2 UNIVERSITY OF PALESTINE	Instructor Name:
Course Title: Calculus I	I	Student Name:
Due: 20-May-2019	9 UP	Student No.:
No. of Questions: (4 Four) Final Exam	Section No.:
Time: (2 Hours) $\frac{11111112xa111}{Grada}$	College Name: Engineering
Calculator (Yes, no advanced ones	Second semester 2018/2019	Using Dictionary (No)

<u>Three Branches</u>

(12+10+7=29 points)

- (a) Given that $y = 3 \frac{5}{2} \ln(x)$
 - 1. Find the followings
 - I. Domain of y =
 - II. Range of y =
 - **2.** Find the inverse function $y^{-1}(x)$.

- **3.** Find the domain and range of $y^{-1}(x)$
 - I. Domain of $y^{-1} =$
 - II. Range of $y^{-1} =$

4. Find
$$\frac{d y^{-1}(x)}{dx}\Big|_{f(x)=3}$$

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Course Code:	ENGI 1302		Instructor Name:	
Course Title:	Calculus II	and the state of t	Student Name:	
Due:	20-May-2019	UP F	Student No.:	
No. of Questions:	(4 Four)	Final Exam	Section No.:	
Time:	(2 Hours)	Grade 100/2	College Name:	Engineering
Calculator (Yes, no	advanced ones)	Second semester 2018/2019	Using Dictionary	(No)

(b) Given that

$y_1 = \pi^{2x}$	$y_2 = 2x^{(e^2)}$
$y_3 = \tanh(x^2 + 2)$	$y_4 = \ln(\cosh^{-1}(x))$

Evaluate the following derivatives

$\frac{d y_1}{dx} =$	$\frac{d y_2}{dx} =$
$\frac{d y_3}{dx} =$	$\frac{d y_4}{dx} =$

(c) Compute the following limit: $\lim_{x \to 0^+} x \int_x^1 \frac{\cos(t)}{t^2} dt$

Course Code: ENGI 130	2 UNIVERSITY OF PALESTINE	Instructor Name:
Course Title: Calculus	II	Student Name:
Due: 20-May-20	9 UP	Student No.:
No. of Questions: (4 Fou	r) Final Exam	Section No.:
Time: (2 Hour	s) $Grade 100/2$	College Name: Engineering
Calculator (Yes, no advanced one	s) Second semester 2018/2019	Using Dictionary (No)

<u>Two Branches</u>

(10 + 8 = 18 points)

Evaluate the following *two* integrals

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

(b)
$$\int_{1}^{\infty} \frac{1}{x + x\sqrt[3]{x}} dx$$

Course Code: ENGI 130	2 UNIVERSITY OF PALESTINE	Instructor Name:	
Course Title: Calculus	I	Student Name:	
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No. of Questions: (4 Four	Final Exam	Section No.:	
Time: (2 Hours	$G_{rade} = \frac{100/2}{100}$	College Name:	Engineering
Calculator (Yes, no advanced ones	S) Second semester 2018/2019	Using Dictionary	(No)

<u>Two Branches</u>

(10+8 = 18 points)

Test the following *two* improper integrals for convergence/divergence

(a)
$$\int_{0}^{\infty} \frac{1}{7^{x}+1} dx$$

(b)
$$\int_{0}^{1} \frac{\cos^{2}(x)}{x^{3} + \sin(x)} dx$$

Course Code:	ENGI 1302	UNIVERSITY OF PALESTINE	Instructor Name:	
Course Title:	Calculus II	and a state of the	Student Name:	
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No. of Questions:	(4 Four)	Final Exam	Section No.:	
Time:	(2 Hours)	$G_{rade} = 100/2$	College Name:	Engineering
Calculator (Yes, n	o advanced ones)	Second semester 2018/2019	Using Dictionary	(No)

<u>Five Branches</u>

(7+7+7+7+7=35 points)

Test the following *five* series for convergence/divergence, and find the sum when possible

$$1. \quad \sum_{n=2}^{\infty} \frac{1}{n(n-1)}$$

2.
$$\sum_{n=1}^{\infty} \frac{\sec^{-1}(n^2+n)}{n^{2.3}+600\sqrt{n}}$$

Course Code:ENGI 1302Course Title:Calculus IIDue:20-May-2019No. of Questions:(4 Four)Time:(2 Hours)Calculator(Yes, no advanced ones)	Final Exam Grade 100/2 Second semester 2018/2019	Instructor Name: Student Name: Student No.: Section No.: College Name: Using Dictionary	Engineering (No)
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3.
$$\sum_{n=1}^{\infty} \frac{3^n + 2^n}{6^n}$$

$$4. \qquad \sum_{n=3}^{\infty} \frac{8}{n \left(\ln \left(n^2 \right) \right)^3}$$

Course Code: ENGI 130	2 UNIVERSITY OF PALESTINE	Instructor Name:	
Course Title: Calculus	II	Student Name:	
Due: 20-May-20	9 UP	Student No.:	
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Time: (2 Hour	s) $Grada = 100/2$	College Name: Engineeri	ing
Calculator (Yes, no advanced one	s) Second semester 2018/2019	Using Dictionary (N	10)

$$5. \qquad \sum_{n=2}^{\infty} \frac{1}{(\ln n)^2}$$

End of Questions Good Luck

Page 7 out of 7