

الباب الثالث عشر

امتحانات متنوعة

Various Exams

جامعة قناة السويس	الفرقة: إعدادي
كلية هندسة البترول والتعدين بالسويس	الزمن : ساعة و نصف
قسم العلوم والرياضيات الهندسية	التاريخ: 17/1/2010
تخلفات تفاضل	
امتحان نهاية التيرم الأول	

<u>أجب عن الأسئلة الآتية:</u>	
<u>السؤال الأول: (25 درجة)</u>	
ا) عرف كل من الدوال الآتية موضحا بالرسم: دالة الجيب- دالة جيب التمام.	
ب) باستخدام التعريف العام للتفاضل أوجد المشتقة الأولى للدالة الآتية : $y = \cos x$	
ج) أوجد المعامل التفاضلي للدوال الآتية: $y = \operatorname{cosec} x$	
	$y = \cosh x$
د) اوجد المشتقة النونية للدالة الآتية: $y = x^4 e^{-3x}$	
<u>السؤال الثاني: (25 درجة)</u>	
أ) إذا كانت $f(x) \in N(4,3), f(x) = 3x + 7$ أوجد ε لكل	

$$x \in N(-1, 0.1)$$

$$\lim_{x \rightarrow 2} \frac{3x + 4}{5x + 7}$$

(ب) اوجد نهاية الدالة

$$f(x) = \begin{cases} 3x - 2 & \text{if } x < 2 \\ x^2 & \text{if } x > 2 \end{cases}$$

(ج) اذا كانت

$$\lim_{x \rightarrow 2} f(x)$$

اوجد

(د) هل تحقق الدالة $y = x^2 |x|$ شروط نظرية رول في الفترة

$$[-1, 1]$$

السؤال الثالث: (25 درجة)

(أ) باستخدام قاعدة اوبيتال احسب النهايات التالية : $\lim_{x \rightarrow 2} \frac{\ln(x^2 - 3)}{x^2 + 3x - 10}$

(ب) اوجد متسلسلة مكلورين للدالة $\cos x$ والدالة $\ln(1 + x)$

في قوى x التصاعديّة .

$$f(x) = (x + 5)^2 \sqrt[3]{x - 4}$$

(ج) اوجد النقطة الحرجة للدالة

(د) : اوجد معادلتى المماس والعمودى للمنحنى

$$\sqrt{x/y} + \sqrt{y/x} = 5/2 \text{ عند النقطة } (6, 3) .$$

ا. د/ عادل نسيم

مع تمنياتي بالنجاح

الفرقة :إعدادي
الزمن : ساعة و نصف
التاريخ: 2009/1/22

جامعة قناة السويس
كلية هندسة البترول والتعدين بالسويس
قسم العلوم والرياضيات الهندسية
تفاضل

امتحان نهاية التيرم الأول 2009/2008

أجب عن الأسئلة الآتية:

السؤال الأول: (17 درجة)

(ا) عرف كل من موضحا بالرسم: دالة الجيب- دالة جيب التمام.
(ب) باستخدام التعريف العام للتفاضل أوجد المشتقة الأولى للدالة الآتية
 $y = \ln x$:

(ج) أوجد المعامل التفاضلى للدوال الآتية:

$y = \cosh x$ و $y = \tan x$
(د) أوجد المشتقة النونية للدالة الآتية:
 $y = x^4 e^{-3x}$

السؤال الثانى: (17 درجة)

(أ) إذا كانت $f(x) \in N(4,3), f(x) = 3x + 7$. أوجد ε لكل
 $x \in N(-1,0.1)$

$$\lim_{x \rightarrow 2} \frac{3x + 4}{5x + 7}$$

(ب) أوجد نهاية الدالة

$$f(x) = \begin{cases} 3x - 2 & \text{if } x < 2 \\ x^2 & \text{if } x > 2 \end{cases}$$

(ج) إذا كانت

$$\lim_{x \rightarrow 2} f(x) \quad \text{أوجد}$$

(د) هل تحقق الدالة $y = x^2 |x|$ شروط نظرية رول فى الفترة
. $[-1, 1]$

السؤال الثالث: (16 درجة)

أ) باستخدام قاعدة اوبيتال احسب النهايات التالية : $\lim_{x \rightarrow 2} \frac{\ln(x^2 - 3)}{x^2 + 3x - 10}$

ب) اوجد متسلسلة مكلورين للدالة $\cos x$ والدالة $\ln(1 - x)$ في قوى x التصاعديّة .

ج) اوجد النقطة الحرجة للدالة $f(x) = (x + 5)^2 \sqrt[3]{x - 4}$

د) : أوجد معادلتى المماس والعمودى للمنحنى $\sqrt{x/y} + \sqrt{y/x} = 5/2$ عند النقطة $(6, 3)$.

مع تمنياتي بالنجاح . ا. د/ عادل نسيم

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