الجامعة اللبنانية
كلية الصحة العامة

مباراة الدخول ٢٠١١ – ٢٠١٢ ×
مسابقة في الرياضيات
المدة : ساعة واحدة

I- Calculer les limites suivantes:

$\lim_{x\to\infty} \frac{e^x-e}{x-1}$ (2pts)

$\lim_{n\to\infty} \sqrt{n^2+n+1}-\sqrt{n^2+1}$ (2pts)

II- Calculer les intégrales suivantes:

$I=\int \frac{dx}{\sqrt{x}\sqrt{1+\sqrt{x}}}$ (2pts)

$J=\int_0^1 (x+2)\,e^{x+1}\,dx$ (3pts)

III- Trouver a, b et c qui verifient l'égalité suivante:

$\frac{2x^2-1}{x^2(x+1)} = \frac{a}{x^2}+\frac{b}{x}+\frac{c}{x+1}$ (3pts)

IV- Etudier la fonction suivante: $y = x+\sqrt{4+x^2}$
et tracer sa courbe representative. (8pts)

I- Calculate the following limits:

$\lim_{x\to\infty} \frac{e^x-e}{x-1}$ (2pts)

$\lim_{n\to\infty} \sqrt{n^2+n+1}-\sqrt{n^2+1}$ (2pts)

II- Calculate the following integrals:

$I=\int \frac{dx}{\sqrt{x}\sqrt{1+\sqrt{x}}}$ (2pts)

$J=\int_0^1 (x+2)\,e^{x+1}\,dx$ (3pts)

III- Find a,b and c such that they fulfill the following equality:

$\frac{2x^2-1}{x^2(x+1)} = \frac{a}{x^2}+\frac{b}{x}+\frac{c}{x+1}$ (3pts)

IV- Study the following function: $y = x+\sqrt{4+x^2}$
and trace the corresponding graph

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