Demi-final Exam-MATH 17B, No. 1

60 minutes

Ex 1: compute the itegrals

a) $\int(\sqrt{x} + \sqrt{e^x})\, dx$ b) $\int_0^{\pi/2} cos\, x\, e^{sin\, x} dx$ c) $\int_1^2 x^2 ln\, x\, dx$

Ex 2: find the area of the region enclosed by $y = x^2 - 2x + 1$ and $y = -x + 3$.

Ex 3: evaluate the integrals of rational functions

a) $\int \frac{x^3+2x^2-1}{x^2-x}$dx b) $\int \frac{4x-1}{x^2+1}$

Ex 4: compute $\int_0^{+\infty} \frac{1}{\sqrt{x+1}} dx$

Demi-final Exam-MATH 17B, No.2

60 minutes

Ex 1: compute the itegrals

b) $\int(sin\, 2x + \sqrt{e^x})\, dx$ b) $\int_0^{\pi/2} sin\, x\, e^{cos\, x} dx$ c) $\int_0^1 x\, e^{x+1}\, dx$

Ex 2: find the area of the region enclosed by $y = -x^2 + 1$ and $y = -x - 1$.

Ex 3: evaluate the integrals of rational functions

b) $\int \frac{x^3+x^2-1}{x^2+x}$dx b) $\int \frac{x+1}{x^2+1}$

Ex 4: compute $\int_1^e \frac{1}{x ln\, x} dx$