

1000

[5 marks] Questi

$$f(x) = \frac{1+x}{(1-x)^2}$$

$$\frac{1}{1-x} = \sum_n$$

$$\Rightarrow \frac{1+x}{(1-x)^2}$$

Clearly

[5 marks] Questio

According

$$\sum_{n>1}$$

[5 marks] Question 3. Approximate  $1/1500$ .

The series is a  
according to

$$\sum_{n=1}^{\infty} \frac{k^n}{(n+1)}$$

with  $(k+)$   
but  $(k+)$

The desired  
as  $\sum_{n=1}^2$

[5 marks] Question 4. Evaluate  $\int_0^1$

$$e^x = \sum_{n=0}^{\infty} \frac{x^n}{n!}$$

$$e^{-x^4} = \sum_{n=0}^{\infty} \frac{(-1)^n x^{4n}}{n!}$$

$$\int_0^1 e^{-x^4} dx = \sum_{n=0}^{\infty} \frac{(-1)^n}{n!} \int_0^1 x^{4n} dx$$

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[5 marks] Ques

$f$

$$0 \leq 1 \text{ for}$$

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[5 marks] Ques

$$f(x, y, z) = x +$$

After Lag  
point a

i.e.

But since  
constraint

max

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the

[5 marks] (0,0,0).

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$x^2 -$

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$$R = [1,2] \times [0$$

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$$-z = -2 + 3x$$

By Fubini

$$V = \int_0^{2/3} 1$$

$$= \frac{1}{9}$$

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$E =$

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Or