



Funded by

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Week 8  
Week 9  
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No, the answer is incorrect.  
Score: 0  
Accepted Answers:  

$$\frac{e^{\frac{d-d}{2}}}{e^{\frac{d-d}{2}}}$$
  
4) The resolvent kernel of the Volterra integral equation 1 point  
 $u(x, t) = e^{x \sin x} - \int_{0}^{x} \left(\frac{2 + \cos x}{2 + \cos x}\right) u(t)dt, is$   
 $\left(\frac{2 + \cos x}{2 + \cos x}\right) e^{x-t}$   
 $\left(\frac{2 + \cos x}{2 + \cos x}\right) e^{t-x}$   
 $\left($ 

Integral Equations, calculus of variations and its...

$$\frac{2x-t+\lambda(\frac{1}{x}-x-t+2xt)}{1-\frac{1}{x}+\frac{1}{x}}$$
Now of these  
No, the answer is incorrect.  
Score: 0  
Accepted Answers:  

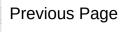
$$\frac{2x-t-\lambda(\frac{1}{x}-t-t+2xt)}{1-\frac{1}{x}+\frac{2x}{x}}$$
(o) Consider the Fredholm integral equation  
 $y(x) = \lambda \int_{-1}^{1} (x+t+1)y(t)dt$ ,  
where  $\lambda$  is a constant. Then the resolvent kernel  
 $\Gamma(x, t; \lambda)$  is given by  

$$\frac{(x+t+1)-2\lambda(xt+\frac{1}{x})}{1-2\lambda+\frac{x^2}{x}}$$
( $x+t+1)-2\lambda(xt+\frac{1}{x})$   
 $(x+t+1)-2\lambda(xt+\frac{1}{x})$   
 $(x+t+$ 

Consider the Fredholm integral equation  $y(x)=f(x)+\lambda\int_{0}^{2\pi}\sin x\cos ty(t)dt.$ Then the integral equation has a unique solution for each  $\lambda$ no solution for any  $\lambda$ infinitely many solutions for some  $\lambda$ none of these No, the answer is incorrect. Score: 0 **Accepted Answers:** a unique solution for each  $\lambda$ 9) Consider the Fredholm integral equation 1 point  $y(x) = x + \lambda \int_0^1 (4xt - x^2)y(t)dt.$ Then $y(x)=24x-9x^2 \ for \ \lambda=1$  $y(x)=24x-9x^2 \ for \ \lambda=-1$ y(x) = 2x for  $\lambda = 0$ none of these No, the answer is incorrect. Score: 0 **Accepted Answers:**  $y(x) = 24x - 9x^2$  for  $\lambda = 1$ 10) 1 point  $Consider \ the \ Fredholm \ integral \ equation$  $y(x)=f(x)+\int_{0}^{1}xe^{t}y(t)dt$ where f(x) is a non zero continuous function. Then, the integral equation has no solution if  $\int_0^1 f(x)e^x dx = 0$ a solution if  $\int_0^1 f(x) x dx = 0$ a solution if  $\int_0^1 f(x)e^x dx = 0$ none of the above No, the answer is incorrect. Score: 0

**Accepted Answers:** 

a solution if  $\int_0^1 f(x) e^x dx = 0$ 





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