43	
7-3	
2	COE 352 Project Z
6	
	Derivation of weak form
6	70 48 425.15
	$\frac{\partial u}{\partial t} - \frac{\partial^2 u}{\partial x^2} = f(x,t) \qquad (x,t) \in (0,1) \times (0,1)$
	3f 35 (603)5 Million
	$u(x,0) = \sin \pi x$
	$u(0,+) = u(1,+) = 0$ $f(x,t) = (\pi^2 - 1) c^{-1} \sin \pi x$
	$u(x,t) = e^{t} \sin \pi x$
	1 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	) = v(x)dx - 5 = 5 = V(x)dx = 5 f(x,t)
	Same 8
	$u=v(x)$ $du=v'(x)dx$ $v=\frac{\partial u}{\partial x}$
	$V = \frac{du}{dx} = \frac{d^2u}{dx^2} dx$
D (80)	
9	3u 70 1 2v 2v 5
9 5	$\frac{\partial^{2}}{\partial t} V(x) dx - \left[V(x) \frac{\partial^{2}}{\partial x}\right]_{0}^{2} + \frac{\partial^{2}}{\partial x} \frac{\partial^{2}}{\partial x} = \int_{0}^{1} f(x,t) V(x) dx$
9	Maria Poos O
-3	$V(x) = \phi_i(x)$
3 1	$\frac{\partial x}{\partial t} \phi_i(x) dx + \frac{1}{2} \frac{\partial x}{\partial x} \frac{\partial \phi_i}{\partial x} dx - \frac{1}{2} f(x,t) \phi_i(x) dx = 0$
> >	2+ 4,(x) 2x + ) 2x 2x 2x - ) f(x,t) \$\phi_i(x) dx = 0
-3	