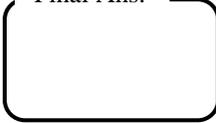
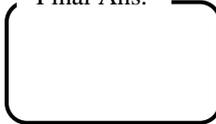

Q1. Evaluate $f(2)$, if $\int_{\sqrt{x}}^1 t^2 f(t) dt = x \ln x$ where $f(x)$ is a continuous function.

Final Ans. 

Q2. Evaluate $\int_0^1 (2x+1)\sqrt{1-x} dx$

Final Ans. 

Q1. Calculate $\int_{\sqrt{2}}^{\sqrt{3}} 2x f(x^2) dx$, if $f(x)$ is an even continuous function such that $\int_{-3}^0 f(x) dx = 8$ and $\int_{-2}^2 f(x) dx = 2$.

Final Ans.

Q2. Set up (**Do NOT evaluate**) an integral for the area of the region enclosed by $y^2 = -x$ and $x + y = -2$.
(Show all your work)

Final Ans.