INTEGRATION BY PARTS EXERCISES

1. $\int \ln x\, dx$

2. $\int 5xe^x\, dx$

3. $\int (x+1)e^x\, dx$

4. $\int xe^{-x}\, dx$

5. $\int x\ln x\, dx$

6. If a product has a marginal cost given by $\dfrac{dC}{dx} = (x+1)^2 \ln(x+1)$ and a fixed cost given by $C(0) = \$99$, then find the cost function $C(x)$. Round, as needed, to the nearest cent.