## Evaluate the following using integration by parts

1. $\int x \ln (x) d x$
2. $\int x^{3} e^{x^{2}} d x \quad$ Hint: $u=x^{2}$ and $d v=x e^{x^{2}} d x$
3. $\int \ln (x) d x$
4. $\int \ln (x)^{2} d x$
