Who U?

1. $\int x^3 e^{-4x} dx$ It would be best to differentiate $u =$ _____ and antidifferentiate _____

2. $\int e^{3x} \sin 2x \, dx$ It would be best to differentiate $u =$ _____ and antidifferentiate _____

3. $\int x^2 \cos^{-1} x \, dx$ It would be best to differentiate $u =$ _____ and antidifferentiate _____

4. $\int x \sin 2x \, dx$ It would be best to differentiate $u =$ _____ and antidifferentiate _____

5. $\int x \ln x \, dx$ It would be best to differentiate $u =$ _____ and antidifferentiate _____

6. $\int \ln x \, dx$ It would be best to differentiate $u =$ _____ and antidifferentiate _____

7. $\int \ln x \cos x \, dx$ It would be best to differentiate $u =$ _____ and antidifferentiate _____