

[Quiz 2, Friday January 25th] Name:

Find the following integrals:

1. $\int_0^1 \frac{x^3}{\sqrt{1-x^2}} dx$ (using a substitution, $u = ?$, $du = ?$)

2. $\int_0^1 \frac{x^3}{\sqrt{1-x^2}} dx$ (using an inverse trigonometric substitution, $x = ?$, $dx = ?$)

3. $\int \frac{\ln y}{y^4} dy$

4. $\int \cos^2(\omega t) dt$ ($\omega \neq 0$ constant)