

Quiz #6b: Sections 7.1 & 7.2

CALCULATE THE FOLLOWING INTEGRALS

Show all work to get full credit. Simplify all answers.

5 pts. 1. $\int 3^t dt$

$$\frac{3^t}{\ln 3} + C$$

10 pts. 2. $\int 8z\sqrt{3+z^2} dz$ $u = 3 + z^2$
 $du = 2z dz$

$$4 \int u^{1/2} du$$

$$4\left(\frac{2}{3} u^{3/2}\right) + C$$

$$\frac{8}{3} (3+z^2)^{3/2} + C$$

Don't forget the back! \Rightarrow

5 pts. 3. $\int \ln 5x \, dx$

$$x \ln 5x - \int dx$$

$$x \ln 5x - x + C$$

$$u = \ln 5x \quad dv = dx$$

$$du = \frac{5}{5x} dx \quad v = x$$

10 pts. 4. $\int x \sin x \, dx$

$$-x \cos x + \int \cos x \, dx$$

$$-x \cos x + \sin x + C$$

$$u = x \quad dv = \sin x$$

$$du = dx \quad v = -\cos x$$

Points earned: _____ out of a possible 30 points