
Name: _____ Sect. #: _____ ST.ID _____

1) Find the general indefinite integral:

a) $\int \frac{\sin x}{1 - \sin^2 x} dx$

b) $\int \frac{2x}{\sqrt{1 - 4x^2}} dx$

c) $\int_0^{\frac{3\pi}{2}} |\sin x| dx$

d) $\int \frac{x^2}{\sqrt{1 - x}} dx$

2) Evaluate the following definite integrals:

a) $\int_{-2}^2 \frac{\sin x}{1+x^2} dx$

b) $\int_0^{\frac{\pi}{4}} (1 + \tan x)^3 \sec^2 x dx$

3) By comparing area show that $\frac{1}{3} < \ln 1.5 < \frac{5}{12}$

4) Use the midpoint rule with $n = 10$ to estimate $\ln 1.5$ (Set it up do not evaluate it)

5) Prove that $\ln(xy) = \ln x + \ln y$