

Name: _____
Section Number: _____

MATH 7B - WORKSHEET 4: THE SUBSTITUTION RULE

1. Solve the indefinite integral $\int e^{\sin(x)} \cos(x) dx$.
2. Using u -substitution, solve the indefinite integral $\int \frac{1}{x \ln(x)} dx$.
3. Using u -substitution, solve the indefinite integral $\int \frac{x}{5x - 1} dx$.

4. Consider the following definite integral $\int_0^{\sqrt{2}} x \sin(\pi x^2) dx$.
- Use u-sub and FTC part 2 to solve the definite integral.

b. Write an equivalent definite integral and solve.

5. Find the arclength of the function $y = \ln(\sec(x))$ from 0 to $\pi/4$ (recall that $\sec(x) = 1/\cos(x)$).