

Name: _____

Score: _____

1. Evaluate each of the following integrals.

(a) $\int \frac{\sin^2 x}{\cos x} dx$ (3 points)

(b) $\int_0^2 x^2 \sqrt{4 - x^2} dx$ (3 points)

2. Consider the integral $\int \frac{1}{1-x^2} dx$.

- (a) Evaluate the integral using partial fraction decomposition. (2 points)
- (b) Evaluate the integral using the trigonometric substitution $x = \sin \theta$. (2 points)
- (c) * Explain why you get two apparently different answers for part (a) and (b).
(Bonus 1 point)