

Math 222, Quiz 3

Name:

Circle one: 11:00 12:05

Instructions: Answer all questions fully, showing work where necessary, and circle your answer.

Evaluate the following integrals:

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

Use a trig substitution: $x = 2 \cos \theta$. You should eventually get $2 \ln \left| \frac{2}{x} + \frac{\sqrt{4-x^2}}{x} \right| + \sqrt{4-x^2} + C$.

3) $\int_0^\pi 8 \sin^4 y \cos^2 y dy$ Substitute in $\sin^2 y = \frac{1}{2}(1 - \cos(2x))$ and $\cos^2 y = \frac{1}{2}(1 + \cos(2x))$. The final answer should be $\frac{\pi}{2}$.

Bonus (1 pt): What show won the Emmy for Outstanding Drama Series?
The Sopranos