

Homework #8**Due Friday, March 11th** in Gradescope by 11:59 pm ET

Goal: Exploring Integrals using Secant Trig Substitutions, Complete the Square and also Partial Fractions Decomposition

Compute each of the following Integrals. Simplify when possible.

1. $\int \frac{\sqrt{x^2 - 9}}{x^3} dx$

2. $\int \frac{1}{x^2\sqrt{x^2 - 16}} dx$

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

4. $\int_{-1}^1 \frac{1}{x^2 + 4x + 7} dx$

5. $\int \sqrt{3 - 2x - x^2} dx$

6. $\int \frac{x + 4}{x^2 + 2x + 5} dx$

7. $\int_3^5 \frac{6}{x^2 - 4x + 7} dx$

8. $\int_0^3 \frac{6}{x^2 - 4x - 5} dx$

9. $\int_0^1 \frac{x - 4}{x^2 - 5x + 6} dx$

10. $\int \frac{\arctan x}{x^2} dx = \int \arctan x \cdot (x^{-2}) dx$

11. $\int_{\ln 2}^{\ln 5} \frac{2e^x}{e^{2x} - 1} dx$

12. $\int \frac{10}{(x - 1)(x^2 + 9)} dx$

REGULAR OFFICE HOURS

Sunday: 6–7:30 pm TA Nico, SMUDD 207

Monday: 1:00–3:00 pm

6–7:30 pm TA Daksha, SMUDD 207

7:30–9:00 pm TA Karime, SMUDD 207

Tuesday: 12:00–4:00 pm

6–7:30 pm TA Ian, SMUDD 207

7:30–9:00 pm TA Nico, SMUDD 207

Wednesday: 1:00–3:00 pm

9–10:30 pm TA Daksha, SMUDD 207

Thursday: none for Professor

6–7:30 pm TA Ian, SMUDD 207

7:30–9:00 pm TA Karime, SMUDD 207

Friday: 12:00–2:00 pm

Please e-mail with questions/concerns: dbenedetto@amherst.edu

Either Start early or don't start late.

Thanks for working hard. I appreciate it!