## MAT 115 Worksheet 9 Tuesday, Oct 31 2017

**Important info:** Welcome to the MAT 115 workshop! My name is **Diego Avalos** (avalosgalvez@cpp.edu), and I will be your workshop facilitator. We meet on Tuesdays and Thursdays from 4 to 5:50 pm in room 4-1-314. My office hour is on Mondays from 11:30 am to 12:30 pm in room 94-219. All worksheets and solutions may be found at the website **www.diegoavalos.net/teaching/mat115workshop2017**.

Use integration by parts to solve the integrals in problems 1 to 12.

$$1. \int \sin^{-1} x \, dx$$

$$5. \int x \sec^2 x \, dx$$

9. 
$$\int_{-1}^{1} \ln(x+2) dx$$

2. 
$$\int \tan^{-1}(3x) dx$$

$$6. \int x^3 e^{x^2} dx$$

10. 
$$\int_{2}^{4} \sec^{-1} \sqrt{x} \, dx$$

$$3. \int e^x \sin x \, dx$$

$$7. \int_0^2 xe^{2x} dx$$

11. 
$$\int_0^{\pi} x \sin 2x \, dx$$

4. 
$$\int \sin(\ln x) \, dx$$

8. 
$$\int_{1}^{e} x^2 \ln x \, dx$$

12. 
$$\int_{1}^{3} \sqrt{x} \tan^{-1} \sqrt{x} dx$$

Evaluate the next trigonometric integrals.

13. 
$$\int_0^{\pi/2} \cos^3 x \, dx$$

14. 
$$\int_0^{\pi/3} \sin^4 3x \cos^3 3x \, dx$$

$$15. \int \sec^5 x \tan^3 x \, dx$$