Math 1B: Discussion 1/24/19

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Question 1

Compute the following integrals. You may need to use either u-substitution, integration by parts, or both.

$$\int \tan(x)dx$$

(Hint: Trigonometry)

$$\int x^3 \sin(x^2)dx$$

(Hint: u-substitution, then integration by parts)

$$\int \arcsin(x)dx$$

$$\int e^{(e^x+x)}dx$$

(Hint: Rewrite using laws of exponents)

$$\int_1^e x\ln(x)dx$$

$$\int \sqrt{x}e^{\sqrt{x}}dx$$

$$\int_1^e \frac{1}{x + x(\ln(x))^2}dx$$

$$\int e^x \sin(2x)dx$$

$$\int \frac{1}{x^{1/2} + x^{3/2}}dx$$

(Hint: u-substitution)

Question 2 (*)

Find a formula for positive integers n for the following integrals.

$$\int x^n \ln(x) dx$$

$$\int x^n e^x dx$$

$$\int x^n e^{3x} dx$$

(Hint: How can you use your answer for the second integral to get an answer for the third integral?)