

CALCULUS 1501 WINTER 2010

HOMEWORK ASSIGNMENT 3.

Due January 29.

3.1. Evaluate

$$\int \frac{dx}{\sqrt{x^2 - 6x + 13}}$$

3.2. Evaluate

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

3.3. Evaluate

$$\int \frac{2x^4 + 5x^2 - 2}{2x^3 - x - 1} dx$$

3.4. Write out the form of the partial fraction decomposition of the function

$$P(t) = \frac{t}{(t^2 - 1)^2(t^2 + 1)^3}$$

Do not determine the numerical values of the coefficients.

3.5. Evaluate

$$\int_2^3 \frac{x^2 + 2x - 1}{x^3 - x} dx$$

3.6. Evaluate

$$\int \frac{dx}{\sqrt[4]{1 + x^4}}$$

(*Hint:* Use a substitution $t^4 = 1 + x^4$)