Quiz

Directions: Carefully read each question below and answer to the best of your ability in the space provided. You **MUST** show your work to receive full credit!

1. (5 points) Use fundamental theorem of calculus to find $F'(x)$ for

$$F(x) = \int_2^{x^2-2x+4} e^{2t}\, dt$$

Solution: By fundamental theorem of calculus

$$F'(x) = e^{2(x^2-2x+4)}\,(x^2-2x+4)' = e^{2x^2-4x+8}(2x-2).$$

2. (5 points) Recall that the average value of a function $f(x)$ on $[a,b]$ is

$$f_{\text{avg}} = \frac{\int_a^b f(x)\,dx}{b-a}.$$

Suppose that the average value of $f(x)$ on $[4,6]$ is 1009. Find the value of $\int_4^6 f(x)dx$.

Solution:

$$1009 = \frac{\int_4^6 f(x)\,dx}{6-4} \implies \int_4^6 f(x)\,dx = 2018.$$

Name: _____

Section (circle one): 021 022 023 024

Question:	1	2	Total
Points:	5	5	10
Score:			