

Name: _____

Math 152 Calculus II – Crawford

Quiz 1

18 February 2020

Books, notes (in any form), and calculators are not allowed. *Show all your work.* Good Luck!

1. (4 pts) Differentiate the following. [Do not simplify.]

$$V(t) = \frac{4 + 3t}{te^{-t^2}}$$

2. (3 pts) Integrate the following.

$$\int \frac{1}{e^{\pi x}} dx$$

3. (4 pts) Given $f(x) = 1 + \sqrt{x - 2}$,

(a). Find $f^{-1}(x)$.

(b). State the domain and range of f^{-1} .

4. (4 pts) Given $f(x) = x^3 + 2x - 1$, find $(f^{-1})'(2)$ using the formula $(f^{-1})'(a) = \frac{1}{f'(f^{-1}(a))}$.

[Do not attempt to find f^{-1} .]