

Name _____

Homework 24
section 4.2

1. (10) Find all local and global minimums and maximums of $f(t) = 4t^3 - 3t^2 - 90t + 21$ in the interval $-4 \leq t \leq 6$. List the **coordinates** of each below. If an item doesn't exist, write DNE.

Local minimum _____

Global minimum _____

Local maximum _____

Global maximum _____

_____ Work (which leads to the above answers) should be shown below. _____

2. (6) Find the exact global maximum and minimum values on the interval $[-\frac{3\pi}{2}, \frac{3\pi}{2}]$ of the function

$$f(x) = \sin x - x \cos x - \frac{\pi}{2} \cos x$$

3. (4) What value(s) of x minimize $g(x) = x + 1 - \ln(2x + 1)$ in the interval $0 \leq x \leq 10$?
What is the exact value of the global minimum?