

(Bonus) Quiz #7

Please print your name:

Problem 1. (2 points) Compute the following derivatives.

[No need to show work.]

(a) $\frac{d}{dx} \left[\frac{1}{\sqrt{x}} + e^3 \right] =$

(b) $\frac{d}{dx} \ln(\sin(3x)) =$

Problem 2. (3+2 points) Consider the function $f(x) = (x+1)e^{3x}$.

[Show your work!]

(a) $f(x)$ has local maxima at $x =$ and local minima at $x =$.

[or write "none"]

(b) $f(x)$ has inflection points at $x =$.

[or write "none"]

Problem 3. (3 points) Oil is leaking from a tanker and spreads in a circle whose area increases at a constant rate of $7 \text{ km}^2/\text{h}$. How fast is the radius of the spill increasing after 4 h?