

4. Suppose that $f(0) = -3$ and $f'(x) \leq 5$ for all x . How large can $f(2)$ possibly be?

5. Find the absolute maximum and the absolute minimum: $f(x) = x - \ln x$, $[e^{-1}, e^2]$.

6. Find: $\lim_{x \rightarrow \infty} (xe^{1/x} - x)$

7. Find: $\frac{d^{10}}{dx^{10}}(\ln(x - 1))$.