TMATH 124pm: Quiz 5

Show *all* your work (numerically, algebraically, or geometrically) for each and simplify. No credit is given without supporting work. There are two sides of this quiz.

1. [2] (WebHW13 #12) If $g(2) = 7$ and $g'(x) \leq 1$ for $2 \leq x \leq 5$, how small can $f(5)$ possibly be? Briefly ustify your answer.

2. [6] Let $f(x) = \dfrac{(\ln x)^2}{x}$. For parts (b) and (c), restrict to the interval $(0, 20)$.

(a) [2] (§4.4 #30) Find $\lim_{x\to\infty} f(x)$.

(b) [5] (wks #2) Find the x coordinate of any local extrema on the interval $(0, 20)$.

(c) [1] Find the value (y coordinate) of the absolute minimum on the interval $(0, 20)$.