

LECTURE 20: PRACTICE PROBLEMS

(1) Find the absolute extrema of $f(x) = \frac{e \ln(x)}{x}$ on the interval $[1, e^2]$.

(2) Find the absolute extrema of $f(x) = x\sqrt{x - x^2}$ on the interval $[0, 1]$.

(3) A crazy billionaire gives you 10 meters of gold wire and asks you to construct a rectangle with maximum area. If you succeed, he'll give you and your math professor \$1,000,000. What rectangle will you construct? What will be its dimensions and area?