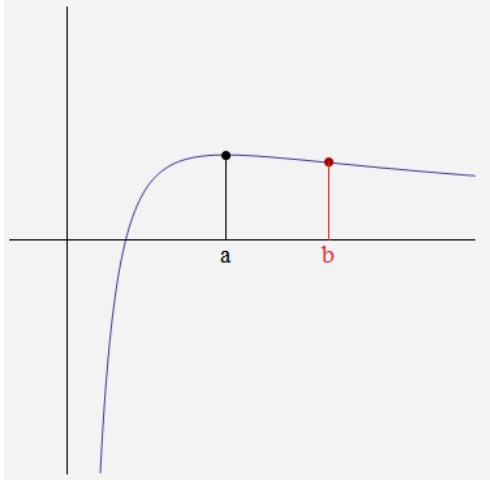Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. The graph of the function $f(x) = \dfrac{\ln x}{x}$ is given below. Find the values of a and b as shown in the graph.

2. Compute the indefinite integrals

(a) $\displaystyle\int \dfrac{x^2 - \sqrt{x}}{\sqrt{x^3}}\, dx =$

(b) $\displaystyle\int \dfrac{x^5 - x^3 e^{5x} + x^2}{x^3}\, dx =$