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. Evaluate the improper integral

$$\int_{32}^{\infty} \frac{5}{\sqrt[5]{x^7}}\,dx.$$

2. Solve the initial value problem

$$y' = \sqrt{y}e^{2x} - 2x\sqrt{y}, \quad y(0) = 4.$$