1. Find the area of the planar region bounded by curve $y = e^x + 2$, and the lines $x = 0$, $x = 2$, and $y = 0$.

2. (a) The planar region $R$ is bounded by the graph of $y = -x^2 + 4x - 2$ and the line $y = x$. Compute the area of $R$. (b) Now, $R$ is bounded by the graph of $y = -x^2 + 4x + \sqrt{x^{17} + 1} + 2016$ and the graph of $y = x + \sqrt{x^{17} + 1} + 2018$. Compute the area of $R$. (b) Finally, $R$ is bounded by the graph of $y = -x^2 + 4x - 2$ and the lines $x = 0$ and $x + y = 2$. Compute the area of $R$.

3. The planar region $R$ is bounded by curves $y = x + 2$ and $x = y^3 - 2y^2$. Compute its area.

4. Compute $\int_{-3}^{3} x \cdot (\sqrt{x + 3} + \sin(x^4) + \cos(x^3)) \, dx$.

5. If $\int_{-1}^{2} f(x) \, dx = 3$ and $\int_{0}^{2} f(x) \, dx = -4$, what is $\int_{0}^{-1} f(x) \, dx$?