1. Find the area of the region bounded by the given curves. Sketch the region if possible.
   a. \( y = x + 1, \ y = 9 - x^2, \ x = -1, \ x = 2 \)
   b. \( y = \sin x, \ y = e^x, \ x = 0, \ x = \pi/2 \)
   c. \( y = x, \ y = x^2 \)
   d. \( y = x^2 - 2x, \ y = x + 4 \)
   e. \( y = x^2, \ y'^2 = x \)
   f. \( y = \cos x, \ y = 2 - \cos x, \ 0 \leq x \leq 2\pi \)
   g. \( y = 8 - x^2, \ y = x^2, \ x = -3, \ x = 3 \)
   h. \( x = 2y^2, \ x = 4 + y^2 \)
   i. \( y = |x|, \ y = x^2 - 2 \)
   j. \( x = 1 - y^2, \ x = y^2 - 1 \)

2. Find the volume of the solid obtained by rotating the region bounded by the given curves about the specified line. Sketch the region and the solid if possible.
   a. \( y = 2 - \frac{1}{2}x, \ y = 0, \ x = 1, \ x = 2; \) about the \( x \)-axis
   b. \( y = 1 - x^2, \ y = 0; \) about the \( x \)-axis
   c. \( y = \sqrt{25 - x^2}, \ y = 0, \ x = 2, \ x = 4; \) about the \( x \)-axis
   d. \( y = x^3, \ y = x, \ x \geq 0; \) about the \( x \)-axis
   e. \( y^2 = x, \ x = 2y; \) about the \( y \)-axis
   f. \( y = \frac{1}{4}x^2, \ x = 2, \ y = 0; \) about the \( y \)-axis
   g. \( y = x, \ y = \sqrt{x}; \) about \( y = 1 \)
   h. \( y = e^{-x}, \ y = 1, \ x = 2; \) about \( y = 2 \)
   i. \( x = y^2, \ x = 1; \) about \( x = 1 \)
   j. \( y = x^2, \ x = y^2; \) about \( x = -1 \)

3. Find the volume of the solid generated by rotating the region bounded by the given curves about the \( y \)-axis. Sketch the region and the solid if possible.
   a. \( y = 1/x, \ y = 0, \ x = 1, \ x = 2 \)
   b. \( y = x^2, \ y = 0, \ x = 0, \ x = 1 \)
   c. \( y = e^{-x^2}, \ y = 0, \ x = 0, \ x = 1 \)
   d. \( y = 4(x - 2)^2, \ y = x^2 - 4x + 7 \)

4. Find the volume of the solid generated by rotating the region bounded by the given curves about the \( x \)-axis. Sketch the region and the solid if possible.
   a. \( x = y^2 + 1, \ x = 0, \ y = 1, \ y = 2 \)
   b. \( x = \sqrt{y}, \ x = 0, \ y = 1 \)
   c. \( y = x^3, \ y = 8, \ x = 0 \)
   d. \( x = 4y^2 - y^3, \ x = 0 \)

5. Find the volume of the solid generated by rotating the region bounded by the given curves about the specified axis. Sketch the region and the solid if possible.
   a. \( y = x^4, \ y = 0, \ x = 1; \) about \( x = 2 \)
   b. \( y = \sqrt{x}, \ y = 0, \ x = 1; \) about \( x = -1 \)
c. \( y = 4x - x^2, y = 3; \) about \( x = 1 \)
d. \( y = x^2, y = 2 - x^2; \) about \( x = 1 \)
e. \( y = x^3, y = 0, x = 1; \) about \( y = 1 \)
f. \( y = x^2, x = y^2; \) about \( y = -1 \)