HW Area Between 2 Curves

Sketch the region enclosed by the given curves. Decide whether the region is Type I or Type II. Draw a typical approximating rectangle and label its height and width. Then find the area of the region.

1. \( y = \sin x \), \( y = e^x \), \( x = 0 \), \( x = \frac{\pi}{2} \)

2. \( y = x \), \( y = x^2 \)

3. \( y = x^2 - 2x \), \( y = x + 4 \)

4. \( y = \tan x \), \( y = 2 \sin x \), \( \frac{\pi}{3} \leq x \leq \frac{\pi}{2} \)

5. \( y = \sqrt{x} \), \( y = \frac{1}{2} x \), \( x = 9 \)

6. \( x = 2y^2 \), \( x = 4 + y^2 \)

7. \( x = 1 - y^2 \), \( x = y^2 - 1 \)