1. Find the area between $f(x) = 3 - x^2$ and g(x) = x + 1.

- 2. Find the volume of the solid formed by revolving the region bounded by $f(x) = 4 x^2$, where $0 \le x \le 2$, around
 - the x axis
 - the y axis

3. Find the volume of the solid of revolution formed by revolving the region bounded by $y = x - x^2$ and the x-axis, where $0 \le x \le 1$), around the y-axis. Use the **Shell Method**.

4. If you were asked to find the volume of the solid formed by revolving the region bounded by the graphs of $y = x^2 + 2$, y = 0, x = 0, and x = 2, about the y-axis, would you use the *shell method* or the *disk method*?