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 $0 \leq x \leq 2$, 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 $0 \leq x \leq 1$ ), around the $y$-axis. Use the Shell Method.
4. If you were asked to find the volume of the solid formed by revoloving 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?
