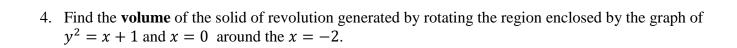
1. Find 
$$\int \frac{\sin^{-1}\left(\frac{x}{2}\right)}{\sqrt{4-x^2}} dx$$

2. Find the **area** of the region bounded by the curves  $y = \ln x$ , x + y = 1 and y = 1.

3. Find the value of  $\int_0^1 \frac{10x + 15}{\sqrt{2x^2 + 6x + 1}} dx$ 



5. The base of a solid is bounded by the curves  $y = \sqrt{9 - x^2}$  and y = 0. If the cross-sections of the solid perpendicular to the x-axis are squares, then find the **volume** of the solid.

6. Evaluate  $\int_0^4 (x-2)^3 \cos x \, dx$