QUIZ 11  SOLUTIONS

A quick sketch shows that the volume is given by the integral:

$$\pi \int_1^2 (2 - \frac{1}{2}x)^2 dx = \pi \int_1^2 (4 + \frac{x^2}{4} - 2x)dx = \pi (4x + \frac{x^3}{12} - x^2) \bigg|_1^2$$

$$= \pi \left( (8 + \frac{2}{3} - 4) - (4 + \frac{1}{12} - 1) \right) = \frac{19}{12} \pi.$$