

$$10. \int_{-\pi/2}^{\pi/2} (2t + \cos t) dt = \frac{2t^2}{2} + \sin t \Big|_{-\pi/2}^{\pi/2} = \left(\left(\frac{\pi}{2} \right)^2 + \sin \left(\frac{\pi}{2} \right) \right) - \left(\left(-\frac{\pi}{2} \right)^2 + \sin \left(-\frac{\pi}{2} \right) \right) = \left(\frac{\pi^2}{4} + 1 \right) - \left(\frac{\pi^2}{4} - 1 \right) = 2$$