1. Evaluate the following integrals.

(a) \( \int_{3}^{6} (x^2 + 2x + 1) \, dx \)

(b) \( \int_{0}^{\pi} 21 \cos(7x) \, dx \)

2. Consider the following integral.

\( \int_{0}^{\pi} \sin(x) \, dx \)

(a) Approximate the above integral using a midpoint sum with \( n = 3 \) subdivisions.

(b) Compare your estimate to the exact area under the curve.