1. Draw the function of \( y = x^2 + 1 \) on \([0,8]\) and then:
   a. Draw the upper sum split into four subintervals
   b. Draw the lower sum split into four subintervals
   c. Draw the midpoint rule split into four subintervals
   d. Pick one of the options above and split it into eight subintervals. What advantage/disadvantage is there by creating more subintervals?

2. What is the difference between distance traveled and displacement?

3. On the interval of \([0,n]\), what is the approximate distance traveled.

4. The velocity function of a projectile fired straight up is \( f(t) = 981 - 9.81t \). Estimate how far the projectile rises during the first 3 and 6 seconds.

5. Approximate the average value of \( \cos(x) \) on the interval of \([0, \pi]\). Split it into four subintervals.