

Solution 21.10

(a) Trapezoidal rule ($n = 5$):

$$I = (0.5 - 0) \frac{1 + 2(8 + 4 + 3.5 + 5) + 1}{10} = 2.15$$

(b) Simpson's rules ($n = 5$):

$$I = (0.2 - 0) \frac{1 + 4(8) + 4}{6} + (0.5 - 0.2) \frac{4 + 3(3.5 + 5) + 1}{8} = 1.233333 + 1.14375 = 2.377083$$