

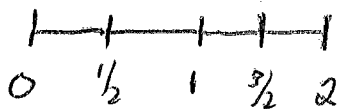
1)  $n=4$ 

$$\text{Trapezoidal: } \int_0^2 x^2 dx \approx \frac{1}{4} \left[ 0 + 2\left(\frac{1}{2}\right)^2 + 2(1)^2 + 2\left(\frac{3}{2}\right)^2 + (2)^2 \right] = \frac{11}{4} = 2.7500$$

$$f(x) = x^2 \quad [0, 2]$$

$$w = \frac{2-0}{4} = \frac{1}{2}$$

$$A = \frac{1}{2} \cdot \frac{1}{2} \left[ f(0) + 2f\left(\frac{1}{2}\right) + 2f(1) + 2f\left(\frac{3}{2}\right) + f(2) \right]$$

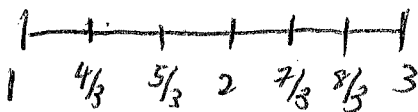


$$5) \text{ Trapezoidal: } \int_1^3 x^3 dx \approx \frac{1}{6} \left[ 1 + 2\left(\frac{4}{3}\right)^3 + 2\left(\frac{5}{3}\right)^3 + 2(2)^3 + 2\left(\frac{7}{3}\right)^3 + 2\left(\frac{8}{3}\right)^3 + 27 \right] \approx 20.2222$$

$$f(x) = x^3 \quad [1, 3]$$

$$n=6$$

$$w = \frac{3-1}{6} = \frac{2}{6} = \frac{1}{3}$$



$$A = \frac{1}{2} \cdot \frac{1}{3} \left[ f(1) + 2f\left(\frac{4}{3}\right) + 2f\left(\frac{5}{3}\right) + 2f(2) + 2f\left(\frac{7}{3}\right) + 2f\left(\frac{8}{3}\right) + f(3) \right]$$

9)

$$\text{Trapezoidal: } \int_0^1 \frac{2}{(x+2)^2} dx \approx \frac{1}{8} \left[ \frac{1}{2} + 2\left(\frac{2}{((1/4)+2)^2}\right) + 2\left(\frac{2}{((1/2)+2)^2}\right) + 2\left(\frac{2}{((3/4)+2)^2}\right) + \frac{2}{9} \right]$$

$$f(x) = \frac{2}{(x+2)^2} \quad [0, 1]$$

$$n=4$$

$$w = \frac{1-0}{4} = \frac{1}{4}$$

$$A = \frac{1}{2} \cdot \frac{1}{4} \left[ f(0) + 2f\left(\frac{1}{4}\right) + 2f\left(\frac{1}{2}\right) + 2f\left(\frac{3}{4}\right) + f(1) \right]$$

