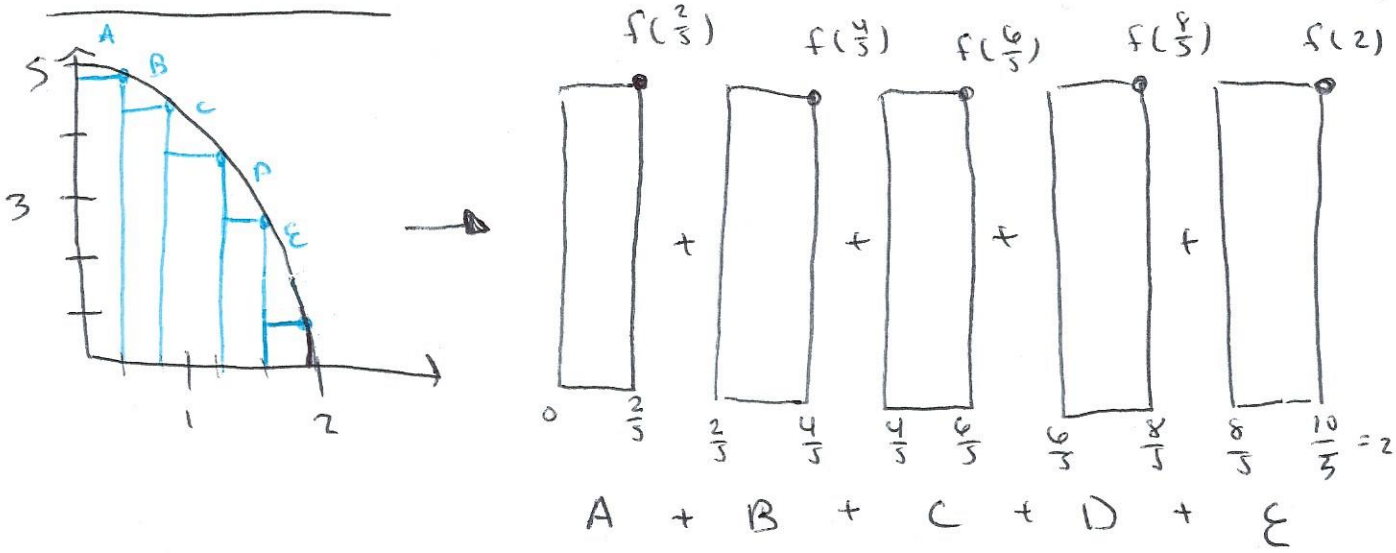
April 14, 2019

$$A = \frac{2}{5}\sum_{i=1}^{5} f(x_i), \quad x_i = a + \Delta x(i-1)$$

$$= \frac{2}{5}\left(5 + \frac{121}{25} + \frac{109}{25} + \frac{89}{25} + \frac{61}{25}\right) = \frac{202}{25}$$

for left endpoints, area is $\frac{202}{25} = 8.08$

Right endpoints



Calculate areas

$$A = A_A + A_B + A_C + A_D + A_E$$

$$= \left(\frac{2}{5}\right)f\left(\frac{2}{5}\right) + \left(\frac{2}{5}\right)f\left(\frac{4}{5}\right) + \left(\frac{2}{5}\right)f\left(\frac{6}{5}\right) + \left(\frac{2}{5}\right)f\left(\frac{8}{5}\right) + \left(\frac{2}{5}\right)f(2)$$

$$= \frac{2}{5}\left(f\left(\frac{2}{5}\right) + f\left(\frac{4}{5}\right) + f\left(\frac{6}{5}\right) + f\left(\frac{8}{5}\right) + f(2)\right)$$

$$= \frac{2}{5}\sum_{i=1}^{5} f(x_i), \text{ where } x_i = a + \Delta x(i-1)$$

$$= \frac{2}{5}\left(\frac{121}{25} + \frac{109}{25} + \frac{89}{25} + \frac{61}{25} + 1\right) = \frac{162}{25}$$

for right endpoints, area is $\frac{162}{25} = 6.48$

The average of left/right endpoints is

$$\frac{\left(\frac{202}{25} + \frac{162}{25}\right)}{2} = \frac{182}{25} = \boxed{7.28}$$