

## Exercises

1. Evaluate the integral  $\int_1^3 \frac{y^3 - 2y^2 - y}{y^2} dy$ . [Section 5.3 #40]
2. Find  $F'(x)$  when  $F(x) = \int_{\sqrt{x}}^{2x} \arctan(t) dt$ . [Section 5.3 #62]
3. Evaluate  $\lim_{n \rightarrow \infty} \frac{1}{n} \left( \sqrt{\frac{1}{n}} + \sqrt{\frac{2}{n}} + \sqrt{\frac{3}{n}} + \cdots + \sqrt{\frac{n}{n}} \right)$   
by first recognizing the sum as a Riemann sum for a function defined on the interval  $[0, 1]$ . [Section 5.3 #76]