

1. Find the derivatives of the following functions, and verify your answer by graphing  $f$  and  $f'$  on the same set of axes.

(a)  $f(x) = x^2 - 2x + 3$

(b)  $f(x) = x^3 - \frac{5}{x^2} + 2$

(c)  $f(x) = 2x^\pi + x^{-42} - 17x$

2. Find an *antiderivative* for each function in 1.