Exercise 1   Find the most general antiderivatives of the function.

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

(b) $f(x) = (x - 5)^2$

(c) $f(x) = e^2$

(d) $f(x) = \sqrt[3]{x^2} + x\sqrt{x}$

(e) $f(t) = \dfrac{3t^4 - t^3 + 6t^2}{t^4}$

(f) $r(\theta) = \sec(\theta)\tan(\theta) - 2e^\theta$

(g) $f(x) = 1 + 2\sin(x) + \dfrac{3}{\sqrt{x}}$
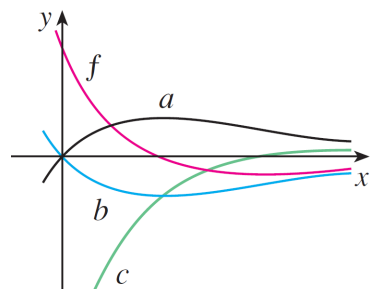
Exercise 2   Find f.

(a) $f''(x) = x^6 - 4x^4 + x + 1$

(b) $f'''(t) = \sqrt{t} - 2\cos(t)$

(c) $f'(t) = t + \dfrac{1}{t^3}, t > 0, f(1) = 6$

(d) $f''(x) = 8x^3 + 5, f(1) = 0, f'(1) = 8$

Exercise 3   The graph of a function f is shown. Which graph is an antiderivative of f and why?

Exercise 4   A car is traveling at 50 mph when the brakes are fully applied, producing a constant deceleration of 22 ft/s^2. What is the distance traveled before the car comes to a stop?