1.) (10 pts.) Use \( f'(x) = \lim_{h \to 0} \frac{f(x + h) - f(x)}{h} \) to find the derivative of \( f(x) = 2x^2 - 3x + 4 \).

2.) (5 pts. each) Use shortcut rules (but not product or quotient rule) to find the derivatives of each function.

a.) \( y = 3x + 7 \)

b.) \( f(x) = x^4 + x^{-2} - x^{3/4} \)

c.) \( y = \frac{(x - 3)^2}{x} \)

d.) \( g(x) = (2 - x)(3x + 7) \)
3.) (6 pts.) Find an equation of the line tangent to the graph of \( f(x) = x^2 - x + 1 \) at the point \( x = 2 \).

4.) (7 pts. each) Use the graph of \( f \) to draw a rough sketch of the graph of its derivative \( f' \).

a.)

b.)