

**Exercise 7**

Given  $f(x) = 2x^2 - 5x$ , find  $f(a + 1) - f(1)$ .

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**Solution**

Evaluate the desired expression.

$$\begin{aligned}f(a + 1) - f(1) &= [2(a + 1)^2 - 5(a + 1)] - [2(1)^2 - 5(1)] \\&= [2(a^2 + 2a + 1) - 5a - 5] - [2(1) - 5] \\&= (2a^2 + 4a + 2 - 5a - 5) - (-3) \\&= (2a^2 - a - 3) + 3 \\&= 2a^2 - a\end{aligned}$$