Compute the following

(1) Find an antiderivative, \( F(x) \), of \( f(x) = 6x^2 + 4x - 1 \) that has \( F(1) = 2 \).

\[
F(x) = \frac{6x^3}{3} + \frac{4x^2}{2} - x + C
\]

\[
= 2x^3 + 2x^2 - x + C
\]

To find \( C \) use \( F(1) = 2 \). That is,

\[
F(1) = 2 \cdot (1)^3 + 2(1)^2 - 1 + C = 2
\]

\[
2 + 2 - 1 + C = 2
\]

\[
3 + C = 2
\]

\[
C = -1 \quad \text{1 point for finding } C
\]

(2) Let \( a > 0 \) be a constant. Compute \( \int_0^a (a - x) \, dx \).

\[
\int_0^a (a - x) \, dx = \frac{a^2}{2}
\]

\[
\int_0^a (a - x) \, dx = [ax - \frac{x^2}{2}]_0^a = 2a - \frac{a^2}{2} \quad \text{to have}
\]

\[
= (a(0) - \frac{a^2}{2}) - (a(0) - \frac{a(1)^2}{2})
\]

\[
= a^2 - \frac{a^2}{2} - 0
\]

\[
= \frac{a^2}{2} \quad (a^2 - \frac{a^2}{2} \text{ is 0 for})
\]