For full credit you must present a clearly organized solution, showing all supporting calculations.

1. Let
$$f(x) = 2x^3 - 3x^2 - \frac{2}{\sqrt{1 - x^2}} - 2^x \ln 2 \,.$$
Find a general antiderivative $F(x)$ of $f(x)$, valid wherever $f(x)$ is continuous.

2. A particle moves with acceleration $a(t) = \cos(t) - \sin(t)$, with initial velocity $v_0 = v(0) = 0$ and initial position $s_0 = s(0) = -1$. Find the position function $s(t)$.