1 CONTINUITY OF DERIVATIVES

$S_0'(1/2) = S_1'(1/2)$

$S_0''(1/2) = S_1''(1/2)$

$S_0' = -12x^2 + 3$

$S_1' = 12(1-x)^2 - 3$

$-12\left(\frac{1}{2}\right)^2 + 3 = 12\left(1-\frac{1}{2}\right)^2 - 3$

$-\frac{12}{4} + 3 = \frac{12}{4} - 3$

$0 = 0$

$S_0''(x) = -24x$

$S_1''(x) = -24(1-x)$

$-24 \cdot \frac{1}{2} = -24 \cdot \frac{1}{2}$

$-12 = -12$