Evaluate each of the following, showing your reasoning.

1. (3 points) \( \frac{d}{dx} \sin^{-1}(e^x) \)

2. (3 points) \( \frac{d}{dx} (x^2 \sec^{-1} x) \)

3. (3 points) \( \int_{0}^{1/2} \frac{1}{\sqrt{1-x^2}} \, dx \)

4. (3 points) \( \int \frac{1}{9 + x^2} \, dx \)