Review formula 6, page 418, and examples 7, 8, and 9 if you need to remind yourself of how to evaluate the following integrals.

Show steps in evaluating the following. Simplify your answers.

1. \[ \int_{0}^{2} \frac{1}{4 + x^2} \, dx \]

2. \[ \int_{0}^{3} \frac{x}{16 + x^2} \, dx \]

3. \[ \int_{0}^{\frac{2}{\sqrt{3}}} \frac{x}{16 + x^4} \, dx \]

4. Let \( G \) be a function. We assume that \( G \) is nice and defined everywhere it needs to be.

Transform this integral:

\[ \int_{\pi/4}^{\pi/3} G\left(\tan(\theta)\right) \sec^2(\theta) \, d\theta \]