

1. Use the substitution  $x = 2 \tan \theta$  to evaluate the integral

$$\int \frac{1}{x^2 \sqrt{x^2 + 4}} dx.$$

Remember that your answer should be in terms of  $x$  and not  $\theta$ .

2. Use the substitution  $t = 3 \sec \theta$  to evaluate the definite integral

$$\int_3^6 \frac{1}{t \sqrt{t^2 - 9}} dt.$$