1. Evaluate the indefinite integral \( \int \frac{x^2}{(x^3 + 1)^4} \, dx \).

2. Evaluate the definite integral \( \int_{\pi/4}^{\pi/2} \tan^5 \theta \sec^2 \theta \, d\theta \).

2. Find the area of the region between \( y = 3x^2 \) and \( y = 6x \) (see diagram).