1. (6 points) Find the area of the region enclosed by the parabola $y = x^2$ and the line y = 4.

2. (6 points) Evaluate the indefinite integral by using the given substitution.

$$\int 2x \cos(x^2) \, dx, \quad u = x^2.$$

3. (8 points) Evaluate the indefinite integral.

$$\int \frac{x}{(1+x^2)^2} \, dx$$