Math 232 Worksheet 6 - Trigonometric Substitution

Evaluate the integral using a trigonometric substitution.

(1) $\displaystyle \int x^3 \sqrt{1-x^2}\, dx$ (2) $\displaystyle \int \frac{1}{\sqrt{x^2+9}}\, dx$ (3) $\displaystyle \int \frac{\sqrt{x^2-1}}{2x}\, dx$