Practice with Trig Integrals and Trig Substitutions

Evaluate the following integrals.

1) $\int \dfrac{dx}{x^2\sqrt{4-x^2}}$

2) $\int \sin^5(2x)dx$

3) $\int \sin^2(x)\cos^2(x)dx$

4) $\displaystyle \int \frac{dx}{(x^2+9)^{\frac{3}{2}}}$

5) $\displaystyle \int_0^{\pi/3} \tan^5(x)\sec^3(x)dx$

6) $\displaystyle \int \frac{dx}{\sqrt{x^2+2x-3}}$ (Hint: Complete the square first)