Section 8.4

Guidelines for Trigonometric Substitution

For integrals involving $\sqrt{a^2 - u^2}$, let $u = a \sin \theta$.

For integrals involving $\sqrt{a^2 + u^2}$, let $u = a \tan \theta$.

For integrals involving $\sqrt{u^2 - a^2}$, let $u = a \sec \theta$.

   1) Find $\int \frac{dx}{x\sqrt{4-x^2}}$.

   2) Find $\int \frac{dx}{x^2\sqrt{x^2+9}}$.

3) Find $\int \frac{-5x}{(x^2+5)^{3/2}} dx$

4) Evaluate $\int_4^6 \frac{x^2}{\sqrt{x^2-9}} dx$

5) Find $\int \frac{x}{\sqrt{x^2+4x+8}} dx$

Homework for 8.4: #5, 11, 15, 17, 23, 29, 33, 34, 39