Trigonometric Substitutions Homework

Calculus II

In Exercises 1 – 12, apply Trigonometric Substitution to evaluate the indefinite integrals.

1. $\int \sqrt{x^2+1}\,dx$
2. $\int \sqrt{1-x^2}\,dx$
3. $\int \sqrt{x^2-1}\,dx$
4. $\int \sqrt{4x^2+1}\,dx$
5. $\int \sqrt{1-9x^2}\,dx$
6. $\int \sqrt{16x^2-1}\,dx$

In Exercises 7 – 16, evaluate the indefinite integrals. Some may be evaluated without Trigonometric Substitution.

7. $\int \frac{\sqrt{x^2-11}}{x}\,dx$
8. $\int \frac{1}{(x^2+1)^2}\,dx$
9. $\int \frac{x}{\sqrt{x^2-3}}\,dx$
10. $\int x^2\sqrt{1-x^2}\,dx$
11. $\int \frac{x}{(x^2+9)^{3/2}}\,dx$
12. $\int \frac{5x^2}{\sqrt{x^2-10}}\,dx$