

Section 7.5**Strategy for Integration**

1. Integration techniques:
 - a) Substitution
 - b) Parts
 - c) Trig. Integrals
 - d) Trig. Subs
 - e) Partial Fraction
 - f) Others.

Ex: Integrate the following:

a) $\int \sqrt{2 + \sqrt{3x+1}} dx$

b) $\int e^{\sqrt[4]{x}} dx$

c)
$$\int \frac{\sin(3x)}{\cos^2(3x) + 4\cos(3x) - 21} dx$$

d)
$$\int \frac{2x-3}{[4x^2+4x-15]^{3/2}} dx$$

e) $\int \frac{dx}{1 - \cos x}$

f) $\int \frac{dx}{\sqrt{x} + 4\sqrt[3]{x}}$

g) $\int \sin^{-1}(5x) dx$

h) $\int \frac{2x^3 - 2x^2 - 25x - 31}{x^2 - x - 12} dx$

i) $\int \ln(4x + 5) dx$

j) $\int (7x^3 - 5x + 3)\sin(2x) dx$

k) $\int \sqrt{\frac{1-x}{1+x}} dx$

l) $\int x^8 \sqrt[4]{2x^3+1} dx$