

## Extra Trig Sub Problems

$$1) \int \frac{x^2}{\sqrt{3-x^2}} dx$$

$$\text{ans. } \frac{3}{2} \sin^{-1}\left(\frac{x}{\sqrt{3}}\right) - \frac{x\sqrt{3-x^2}}{2} + C$$

$$2) \int \frac{1}{x^2\sqrt{x^2+9}} dx$$

$$\text{ans. } -\frac{\sqrt{x^2+9}}{9x} + C$$

$$3) \int \frac{\sqrt{x^2-2}}{x} dx$$

$$\text{ans. } \sqrt{x^2-2} - \sqrt{2} \sec^{-1}\left(\frac{x}{\sqrt{2}}\right) + C$$

$$4) \int \frac{\sqrt{x^2+1}}{x^2} dx$$

$$\text{ans. } \ln\left(x + \sqrt{1+x^2}\right) - \frac{\sqrt{x^2+1}}{x} + C$$

$$5) \int \frac{1}{(5-x^2)^{3/2}} dx$$

$$\text{ans. } \frac{x}{5\sqrt{5-x^2}} + C$$