MATH 122

TRIG SUBSTITUTION

GOALS

- ☐ KNOW WHEN EACH KIND OF TRIG SUB APPLIES
- ☐ USE TRIG INTEGRATION TECHNIQUES TO EVALUATE THESE INTEGRALS

Ex:

$$\int \sqrt{4 - x^2}\, dx$$

LET $x = 2\sin\theta$

Ex: $\int \frac{1}{x^2\sqrt{16+x^2}}\,dx$

SUMMARY

$\sqrt{}$ - TERM	TRIG - SUB	TRIG - ID	RESULT
$\sqrt{a^2 - x^2}$			
$\sqrt{a^2 + x^2}$			
$\sqrt{x^2 - a^2}$			

Ex: $\int_{\sqrt{2}}^{2} \frac{\sqrt{4 - x^2}}{x^2} \, dx$

Ex: $\int e^x \sqrt{36 - e^{2x}} \, dx$