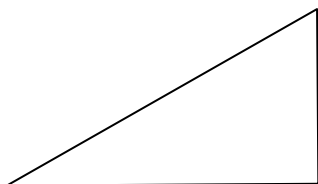


## Calculus BC

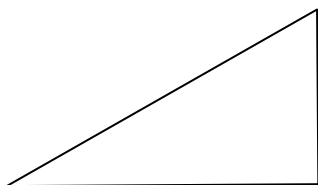
### Section 8.4 – Trig Substitution

used when regular substitution does not work  
for forms of  $u^2 \pm a^2$  and  $a^2 \pm u^2$

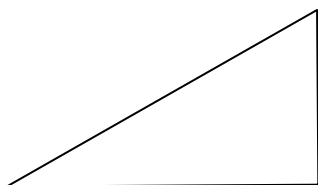
$$a^2 + u^2 \quad \text{use } u =$$



$$a^2 - u^2 \quad \text{use } u =$$



$$u^2 - a^2 \quad \text{use } u =$$



1.  $\int \frac{3dx}{\sqrt{9x^2 - 1}}$

2.  $\int \frac{x^3 dx}{\sqrt{x^2 + 1}}$

3.  $\int \frac{3x dx}{9x^2 - 6x + 5}$

complete the square