

# 4

Note Title

9/14/2005

$$4 \left[ \arctan\left(\frac{1}{2}\right) + \arctan\left(\frac{1}{3}\right) \right] = \pi$$

$$4 \left[ \sum_{i=1}^{\infty} \frac{(-1)^{i+1} \left[ \left(\frac{1}{2}\right)^{2i-1} + \left(\frac{1}{3}\right)^{2i-1} \right]}{2i-1} \right] = \pi$$

an alternating, terms decreasing in size  
so the first neglected term is the bound on the  
error.

$$4 \left[ \frac{\left(\frac{1}{2}\right)^{2i-1} + \left(\frac{1}{3}\right)^{2i-1}}{2i-1} \right] < 10^{-3}$$

