

MATH 1850 Sec 001  
SINGLE VARIABLE CALCULUS I  
QUIZ 1  
January 17, 2013

Name (Last, First) Key

1. An arc of length 5 inches is subtended by an angle of  $45^\circ$  from the center of a circle.  
Find the radius of the circle.

$$\begin{aligned} s &= r\theta & s &= 5 \text{ inches} \\ \theta &= 45^\circ = \frac{\pi}{4} \text{ rad.} \\ \therefore r &= \frac{s}{\theta} = \frac{5}{\frac{\pi}{4}} \text{ inches} \\ &= \boxed{\frac{20}{\pi} \text{ inches}} \end{aligned}$$

2. Use the law of exponents to simplify the expression.

$$\begin{aligned} &\left(\frac{3}{\sqrt{3}}\right)^4 \\ &= \frac{3^4}{3^2} = \frac{81}{9} = \boxed{9} \end{aligned}$$