

# ANSYS AIM - Heat Conduction in a Hollow Cylinder

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## Heat Conduction in a Cylinder

Created using ANSYS AIM 18.1

### Problem Specification

Consider the hollow cylinder pictured below with outer radius ( $r_o=3.25\text{in}$ ), inner radius ( $r_i=1.75\text{in}$ ) and length ( $l=10\text{ ft}$ ). The temperature at the inner radius of the cylinder is 400 degrees Fahrenheit while the outside radius of the cylinder is 80 degrees Fahrenheit with a coefficient of heat transfer of  $0.04\text{ Btu}\cdot\text{h}^{-1}\cdot\text{ft}^{-2}\cdot\text{F}^{-1}$ .

In this tutorial, we will utilize ANSYS AIM to find the temperature throughout the pipe, total heat flux and directional heat flux.

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