Radial 1D Heat Conduction in 3 Regions

Calculation of Temperature Profile for Heat Conduction in 3 Regions

There is a pipe consisting of 3 different materials. The inner wall of the pipe (r=1 cm) is at T=100 C and the outer wall (r=4 cm) is at T=20 C. Note how the temperature distribution changes as the thermal conductivity of the 3 regions change. The blue line is for radial coordinates (cylindrical pipe) and the purple line is for cartesian coordinates (plane).

Graphical CDF Tool

Note the difference in the shape of the lines for a radial system and a cartesian system.