

HW11

Problem #1 7.44

Problem #2 7.45

Problem #3

A cylinder of radius r is kept at constant temperature T_0 by a heater and surrounded by a cylindrical shell of radius R . The only source that heats the shell is the radiation coming from the cylinder. The shell conducts heat very well so the temperatures on its inner and outer surfaces are the same. Both the cylinder and the shell are the black body radiators. What is the steady state temperature of the shell? Both the cylinder and shell are long so you may ignore edge effects.

