- TEST #3 -

Notre Réf. MEN 310

Votre Réf. TEST 3 -

(Chapters 6-7-8)

Date Jan. 29, 2002

#1 A steel pipe is of length of 1Km.

ID = 12cm OD = 14cm.

Water enters the pipe at 60°C.

The pipe is subjected to atmospheric conditions at 0°C.

Find the temperature of the water at the exit.

(60 pts)

#2 A steel ball is maintained at 96K.

It has a diameter of 96cm.

Another cover of the same material surrounds the steel ball. The diameter of the cover is 100cm and at a T = 280K. If $\epsilon_1 = \epsilon_2 = 0.06$ and a shield of $\epsilon = 0.03$ is placed midway in the spherical annulus; Find the heat gained by the inner ball.

(40 pts)