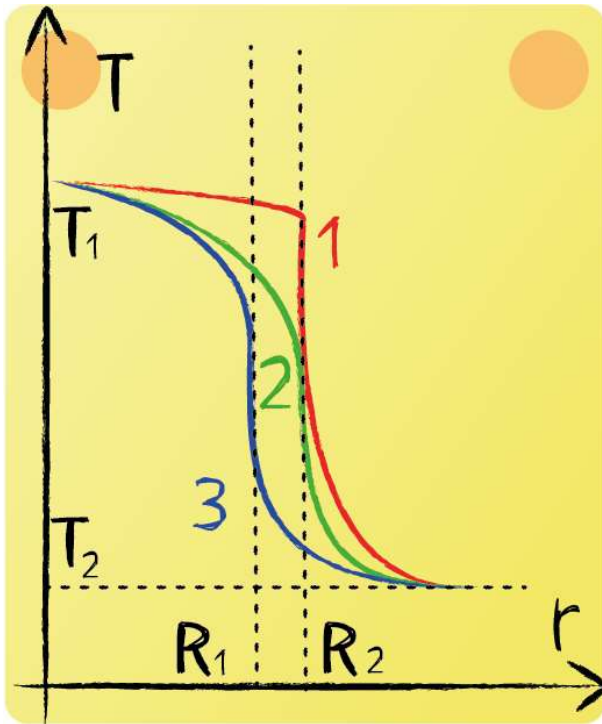


Lecture 10 - Question 4



Consider the following temperature profiles in radial direction for three type of rods. Which of the rods 1, 2 and 3 has the smallest Biot number?



Rod 1 has the smallest Biot number. The body temperature of rod 1 varies the least compared to the other two. For rod 1 and 2 this is in the range of $r = 0$ to $r = R_2$ and for rod 3 this is in the range of $r = 0$ to $r = R_1$. The smaller the Biot number, the less the temperature inside the body will vary. For this reason rod 1 has the smallest Biot number.