A fuel pin is operating with solid pellets of 88% theoretical density and outside radius 5 mm such that at the axial location of maximum fuel temperature, the fuel centerline temperature $T_{CL}$ is 2500°C and the fuel surface temperature, $T_{fo}$ is 700°C. It is desired to raise the pin linear power by 10% by employing one of the following alternative strategies (in each case all the other conditions except the one cited are held constant):

a) raise the maximum allowable fuel temperature;

b) use an annular pellet with the center void of dimension $R_v$, or

c) increase the pellet density.

For each strategy find the new value of the cited parameter necessary to achieve the desired 10% increase of linear pin power. Sintering effects may be neglected.