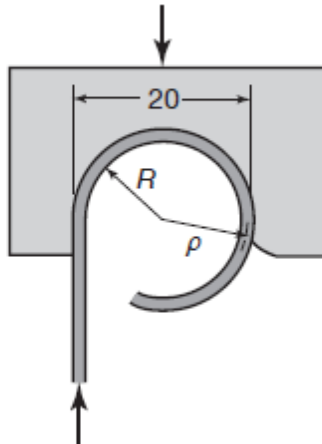
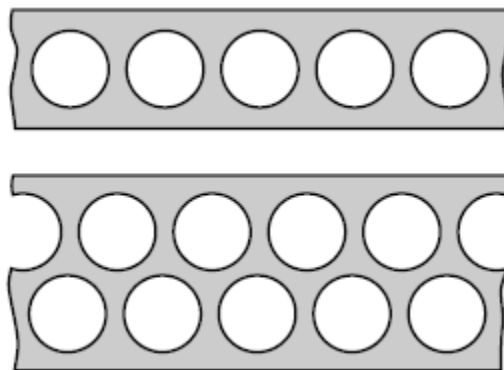


امتیاز هر سوال 10 نمره میباشد.

- 1- A straight bead is being formed on a 1-mm thick aluminum sheet in a 20-mm-diameter die cavity, as shown in the accompanying figure. Let $Y = 150 \text{ MPa}$. Considering springback, calculate the outside diameter of the bead after it is formed and unloaded from the die.



- 2- Estimate the percent scrap in producing round blanks if the clearance between blanks is one tenth of the radius of the blank. Consider single and multiple-row blanking, as shown in the accompanying figure.



Repeating unit cell of the part is as follow:

