

# **Analysis of plane strain upset forging of rectangular billet**

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## Table of Contents

|                      |          |
|----------------------|----------|
| <b>1.Quiz:</b> ..... | <b>3</b> |
|----------------------|----------|

## 1. Quiz:

1. Plane strain compression is carried out on a rectangular billet of initial height of 30 mm, width of 70 mm and depth of 20 mm. The height of the work gets reduced to 20 mm during the operation. What is the forging load being applied at the reduced height, if the yield strength of the material is 450 MPa. Assume sticking friction condition.
2. For the case of combined sticking and sliding friction in plane strain compression forging determine the distance  $x$  at which the transition from sliding to sticking friction occurs, in terms of  $\mu$ ,  $h$ -height and  $a$  which is half width of the rectangular bar.