

 <b>Universiti Malaysia PAHANG</b> <small>Engineering • Technology • Creativity</small>	Name	:	_____
	ID No.	:	_____
	Group	:	_____
	Section	:	_____
	Submission date	:	_____
Module No/Name	:	5/ Strengthening Mechanism	
Quiz duration	:	20 minutes	
Total Marks	:	20	

**Answer the following questions**

Two previously undeformed specimens of the same metal are to be plastically deformed by reducing their cross-sectional areas. One has a circular cross section, and the other is rectangular; during deformation the circular cross section is to remain circular, and the rectangular is to remain as such. Their original and deformed dimensions are as follows:

	<i>Circular (diameter, mm)</i>	<i>Rectangular (mm)</i>
Original dimensions	18.0	20 × 50
Deformed dimensions	15.9	13.7 × 55.1

Which of these specimens will be the hardest after plastic deformation, and why? **(20 Marks)**