

Name: \_\_\_\_\_ Contestant Number: \_\_\_\_\_ School: \_\_\_\_\_

**University of Wyoming “Cowboy Classic” Fall 2013  
Agriculture Technology and Mechanical Systems Career Development Event  
Structural Systems – Welding Skill**

Your logging operation has recently purchased a log splitter for making bundled firewood to sell as an additional source of income. Since this log splitter was purchased “used” you were required to inspect it and perform preventative maintenance. In doing so you discovered that the wedge, on the end of the hydraulic arm that splits the logs, has several cracks in the weld and is bent beyond repair. The broken wedge requires replacement before the log splitter can be used.

Using three pieces of steel provided, two 2”x 4” pieces for the wedge, and one 3”x 4” piece for a backing plate, construct a triangular wedge to be fitted to the log splitter. Since the cutting edge will be under considerable stress, a double pass weld will be required so that it can be sharpened to a point without compromising the weld strength. Use the available 7018 electrodes, 1/8 diameter, to make the appropriate welds.

1. What is the tensile strength rating for E7018 welding rod?

**70,000 psi**

2. What purpose does slag serve in the shielded metal gas welding process?

**Protects the weld from contamination as it hardens**

3. What is the ideal lens shade number used in a welding hood when ARC welding?

- a. 15
- b. 3
- c. 8
- d. **10**

<b>Criterion</b>	<b>Points Possible</b>	<b>Points Earned</b>
Wedge is properly positioned	6	
Quality of Left weld	3	
Quality of Right weld	3	
Quality of “Cutting Edge” weld	6	
Questions	9 (3pts ea.)	
Safety	3	