

Name: \_\_\_\_\_

1) Find the Crosby Group catalog at <http://goo.gl/aoMZTU> and locate the section on “Alloy and Carbon Pear Shaped Links” under “Rigging Accessories.” What is the smallest A-341 Alloy Pear Shaped Link that can safely support a load of 20,000#? What is the design factor used by Crosby for pear rings? (2 points)

2) A hanging point consists of a 1/4” shackle, a 3/8” eye/jaw turnbuckle, and a length of 7x19 1/4” aircraft cable. Based on this information, using a design factor of 5, what is the maximum WLL this system could have? If the point has to safely support 1600#, what should you change? (4 points)

3) Find the WLL (in pounds): (4 points)

a) 1/4” 7x19 galvanized aircraft cable terminated with wire rope clips, DF=5

b) 3/16” 7x19 GAC terminated with Nicopress sleeves, DF=10

c) a 1/2” eyebolt loaded at a 30 degree angle from vertical

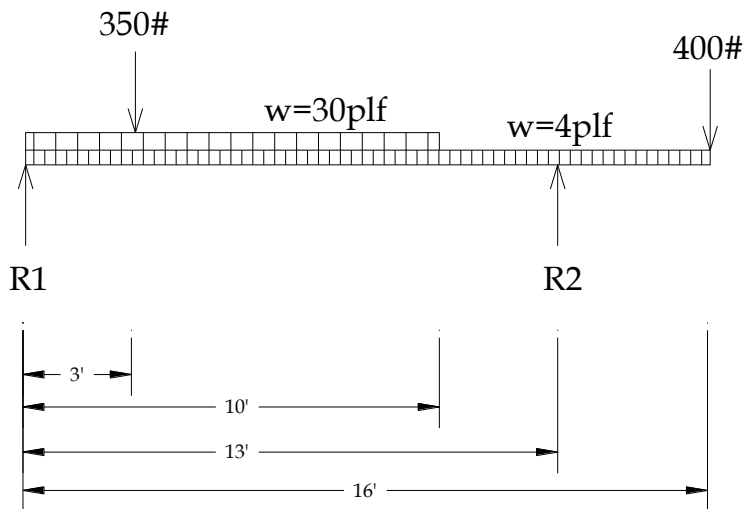
d) a 1/2” shackle loaded at 60 degrees from vertical

*Show all of your work!*

4) Specify the smallest sizes of hardware that are satisfactory for the following load conditions (all loads are in-line or vertical; use standard static load DFs): (8 points)

Hardware	Loading Condition	
	1000#	2000#
7x19 GAC, wire rope clips		
7x19 GAC, Nicopress sleeves		
Screw Pin Anchor Shackle		
Turnbuckle, jaw to jaw		

5) Find the reactions for this free body diagram: (6 points)



Show all of your work!