CMGT 350 **Exam #3** **Fall 2020**

Show all work for full credit. You may work with ONE other person.

Due: End of Class Today

1. A 3-in x 8-in full size rectangular beam has a 16-ft simple span. The beam is subjected a 9 lb/ft uniform load applied to the entire span and a 550 lb concentrated load at midspan. The allowable deflection is 1/360 of the span length. Determine whether the beam is satisfactory for deflection. $E = 1.3 \times 10^3$ ksi

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Due: December 4, 2020 @ 11:59 PM

2. A 6 x 14 Douglas fir beam of rectangular cross section is used in a 15-ft simple span. Determine the maximum allowable uniform load w applied to the entire span that the beam can carry if the allowable flexural stress is 1200 psi, the allowable shear stress is 100 psi, and the allowable deflection is L/360.

3. A simple beam has a span of 20-ft with the load shown. The beam is braced laterally throughout its length. Select the lightest W shape for A36 steel to carry the load.