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Problem 8.36

When approaching this problem, I made several assumptions in order to make this an easier problem for Autodesk Robot. First, I assigned values for the length of the beam. The length of the beam was 8ft. The distributive load had a magnitude of 24 kip/ft and EI was not constant. I solved the problem leaving EI constant then plugged in the values for EI after I drew my beam in Autodesk Robot. E was 29000.02 ksi and I was 518 in^4. A picture of my hand calculations can be found in Figure 1. Figure 2 shows the deflection and the values for EI that the software generated. The deflection matched my hand calculations. Figure 3 shows the slope generated from the software which also matched my hand calculations.

Figure 1: