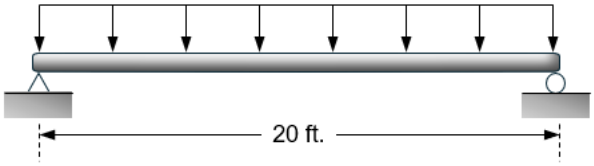
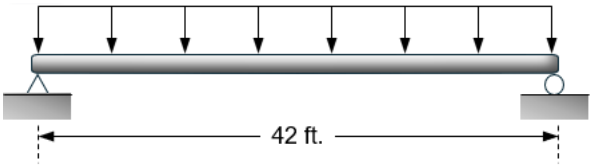
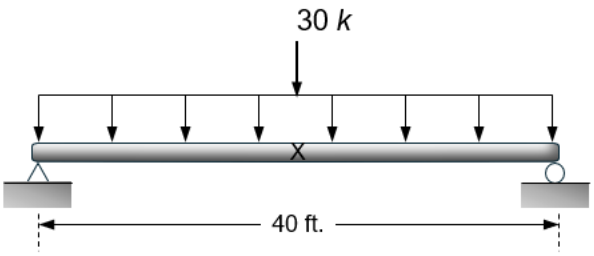
Classroom Problem 5.10-1: Select a **W** section of **A992** steel (F_y = 50 *ksi*; F = 65 *ksi*) for the beam shown below. The beam has continuous lateral support and must support a uniform dead load of 0.2 *k/ft* and a live load of 0.8 k/ft.



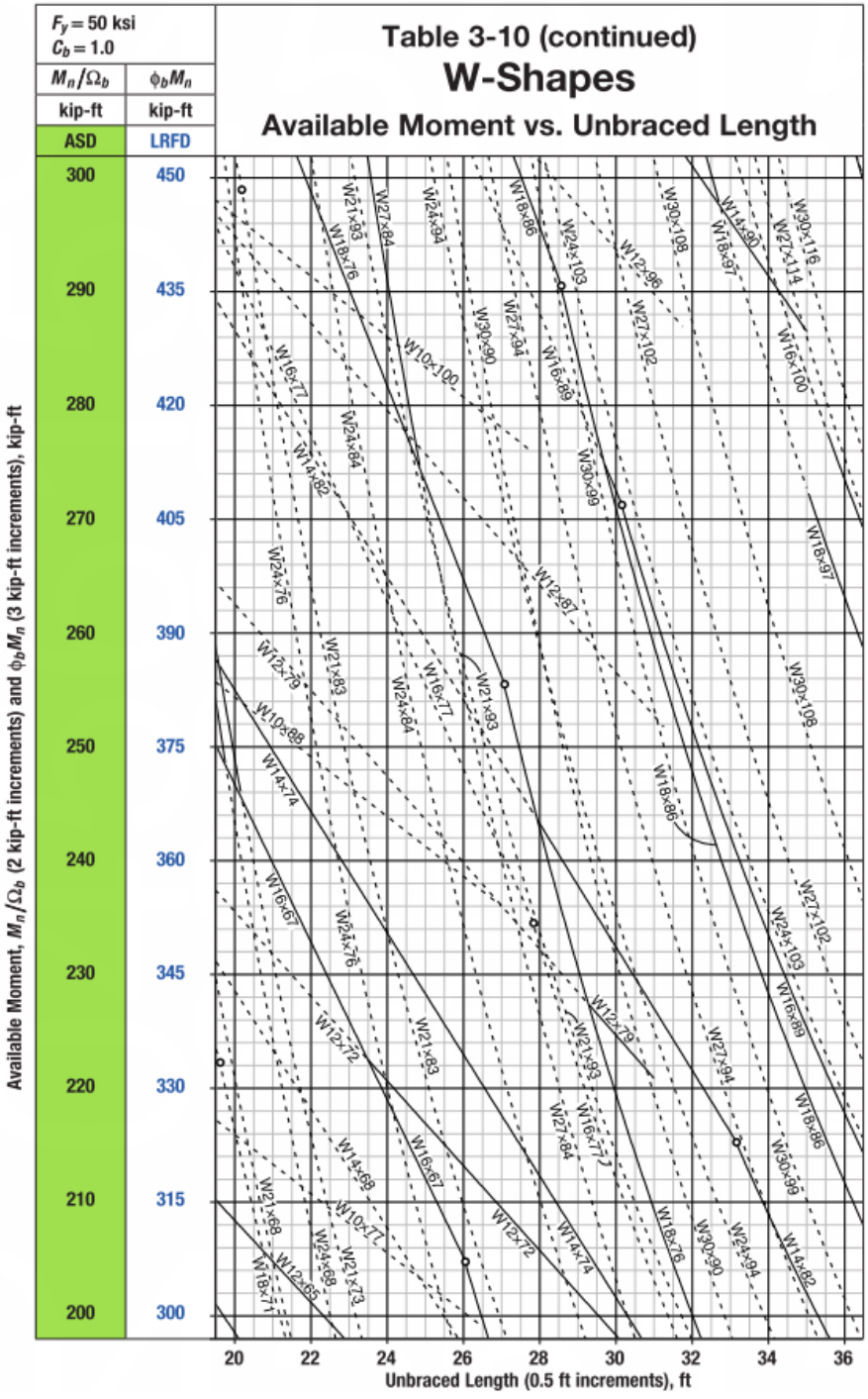
Classroom Problem 5.10-2: Select a **W** section of **A992** steel (F_y = 50 *ksi*; F = 65 *ksi*) for the beam shown below. The beam has continuous lateral support and must support a uniform dead load of 0.5 *k/ft* and a live load of 1.0 k/ft. The live load deflection is limited to $L/360$.



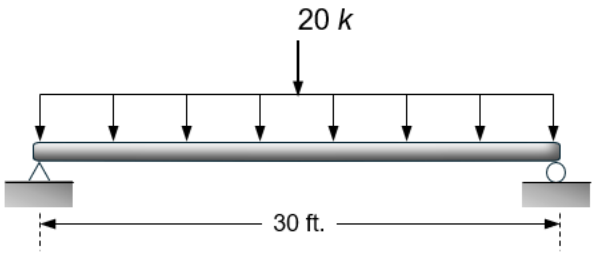
Classroom Problem 5.10-3: Select a **W** section of **A992** steel (F_y = 50 *ksi*; F = 65 *ksi*) for the following beam. The beam is laterally braced at the ends and at mid-span. The beam supports a uniform dead load of 0.5 *k/ft* and a live load of 30 *k* at the center of the span. There is no limit on deflection. Use Table 3-10 in the Manual.



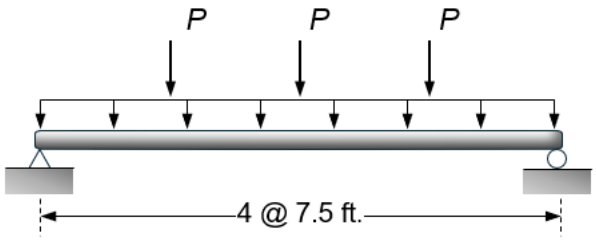
<u>Classroom Problem 5.10-3</u>: Select a **W** section of **A992** steel (F_y = 50 *ksi*; F = 65 *ksi*) for the following beam. The beam is laterally braced at the ends and at mid-span. The beam supports a uniform dead load of 0.5 *k/ft* and a live load of 30 *k* at the center of the span. There is no limit on deflection.



Classroom Problem 5.10-4: Select a **W** section of **A992** steel (F_y = 50 *ksi*; F = 65 *ksi*) for the following beam. The beam is laterally braced at the ends and supports a uniform dead load of 1 *k/ft* and a live load of 20 *k* at the center of the span. There is no limit on deflection. Use Table 6-1 in the Manual.



Classroom Problem 5.10-5: Select a **W** section of **A992** steel (F_y = 50 *ksi*; F = 65 *ksi*) for the following beam. The beam is laterally braced at the ends and supports a uniform dead load of 0.75 *k/ft* and three live loads of 10 *k* at quarter points. There is no limit on deflection. Use Table 6-1 in the Manual.



Classroom Problem 5.10-6: Select a **W** section of **A992** steel (F_y = 50 *ksi*; F = 65 *ksi*) for the 20-ft long cantilever beam shown. Assume the beam is continuously braced and neglect self-weight. The maximum service load deflection is limited to $L/800$.