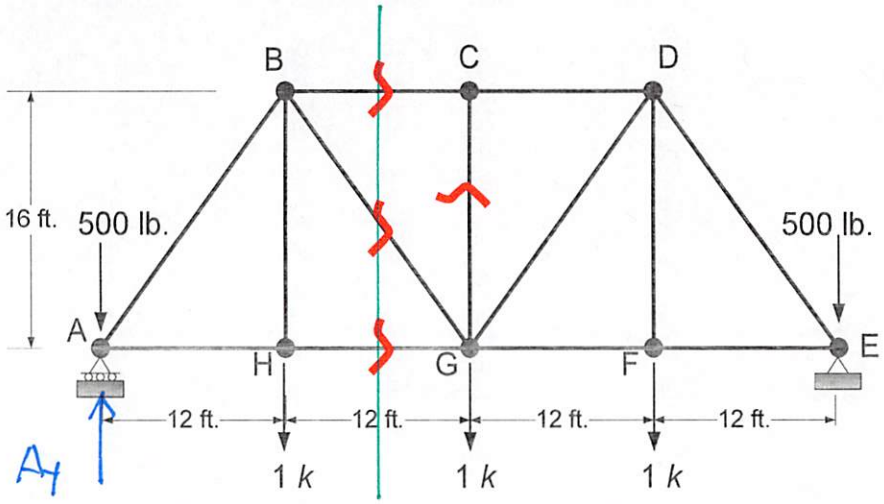
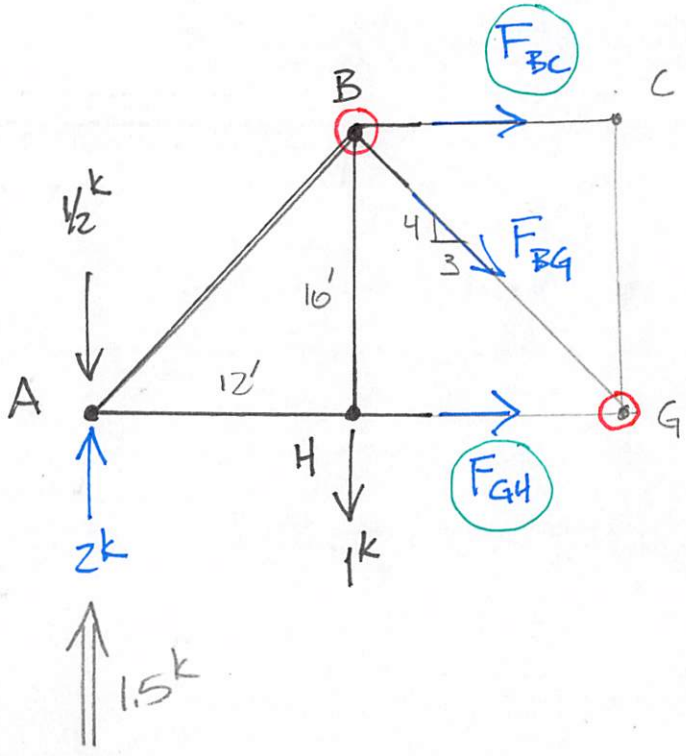
Example 3c-1: Determine the forces BC, BG, HG, and CG in the following truss.



$$\circlearrowleft + \sum M_E = 0 = 1^k(12' + 24' + 36') + 1/2^k(48') - A_y(48')$$

$$A_y = 2^k$$

ZERO FORCE MEMBER – CASE 2 $F_{CG} = 0$



$$\circlearrowleft + \sum M_B = 0 = F_{GH}(16') - 2^k(12') + 1/2^k(12')$$

$$F_{GH} = 1.125^k$$

$$\circlearrowleft + \sum M_G = 0 = -F_{BC}(16') + 1^k(12') - 1.5(24')$$

$$F_{BC} = -1.5^k$$

$$+\uparrow \sum F_y = 0 = -\frac{4}{5}F_{BG} - 1^k + 1.5^k$$

$$F_{BG} = 0.625^k$$