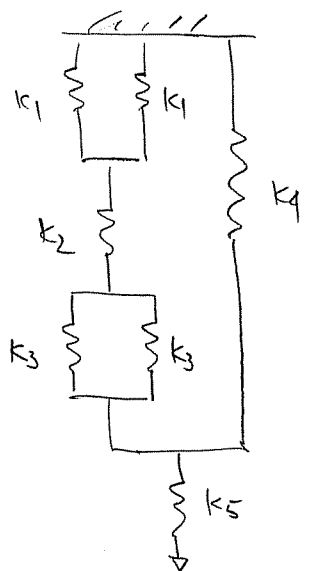
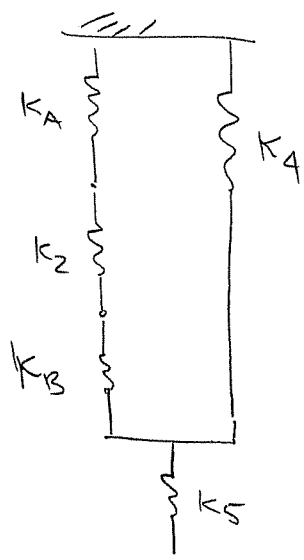


Problem 1.7

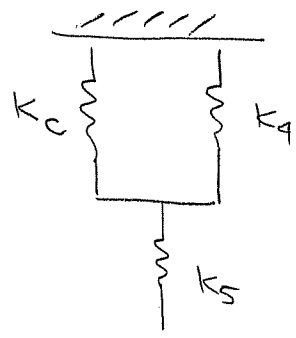
01/1



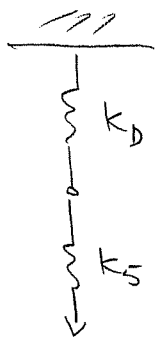
1



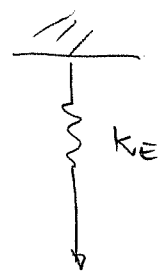
2



3



4



Computation of  $k_A, k_B, k_C, k_D, k_E$ :

Step 1: springs  $k_1$  &  $k_1$  in parallel  $\Rightarrow k_A = 2k_1$

$k_3$  &  $k_3$  in parallel  $\Rightarrow k_B = 2k_3$

Step 2:  $k_A, k_2, k_B$  in series. Then  $k_C$  is computed as

$$\frac{1}{k_C} = \frac{1}{k_A} + \frac{1}{k_2} + \frac{1}{k_B} \quad (k_A \text{ \& } k_B \text{ are now known})$$

Step 3:  $k_C$  &  $k_4$  in parallel  $\Rightarrow k_D = k_C + k_4$

(note that  $k_C$  is now known)

Step 4:  $k_D$  &  $k_5$  in series  $\Rightarrow \frac{1}{k_E} = \frac{1}{k_5} + \frac{1}{k_D}$

( $k_D$  known)

