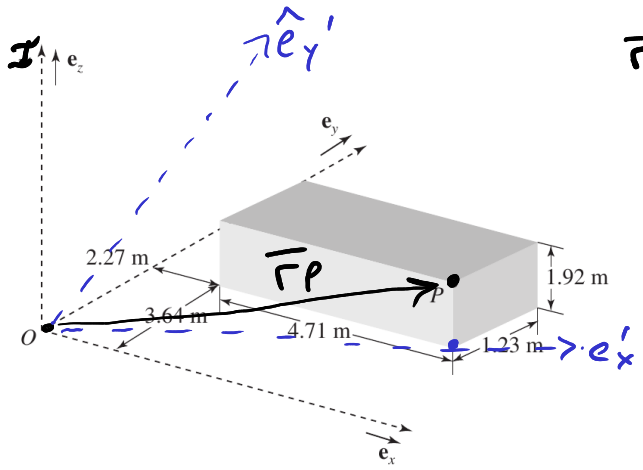
1.1 What are the Cartesian coordinates of point P in frame $\mathcal{I}$, as shown in Figure 1.5?



$\bar{r}_P = (6.98, 3.64, 1.92)$

$= \begin{bmatrix} 6.98 \\ 3.64 \\ 1.92 \end{bmatrix}$

$= 6.98\,\hat{e}_x + 3.64\,\hat{e}_y + 1.92\,\hat{e}_z$

Figure 1.5 Problem 1.1.

1.2 Sketch and label the vectors $\mathbf{r}_{P/O}$, $\mathbf{r}_{P/Q}$, $\mathbf{r}_{Q/P}$ in Figure 1.6.

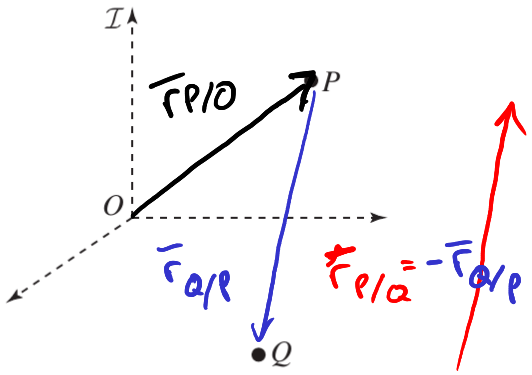


Figure 1.6 Problem 1.2.

$\bar{r}_{P/O}$

position of P with respect to O

Draw a FBD of the barbell

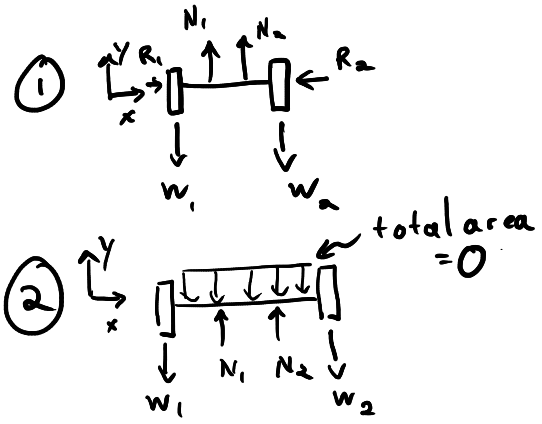


Figure 2.14 Problem 2.6. Image courtesy of Shutterstock.