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IV

$$\|\vec{F}_{CD}\| \begin{vmatrix} \hat{\imath} & \hat{\jmath} & \hat{k} \\ 0.613 & -0.514 & 0 \\ 0.828 & 0.386 & 0.405 \end{vmatrix} = \|\vec{F}_{CD}\| \Big(\hat{\imath}(-0.514)(0.405) - \hat{\jmath}(0.613)(0.405) + \hat{k}\big((0.613)(0.386) + (-0.514)(0.828)\big)\Big)$$

$$= \|\vec{F}_{CD}\| \left(-0.208\hat{\imath} - 0.248\hat{\jmath} + 0.662\hat{k}\right)$$

Now... start solving...

$\sum M_z = 0$ ($\hat{k}$ components) $\Rightarrow +\|\vec{F}_{CD}\|(0.662) - 150.1 = 0$

$$\Rightarrow \boxed{\|\vec{F}_{CD}\| = 226.7\,N}$$

$\sum M_y = 0$, ($\hat{\jmath}$ components) $\Rightarrow -\|\vec{F}_{CD}\|(0.613)(0.405) - 1.2\,B_x = 0$

$$\Rightarrow \boxed{B_x = -\frac{(226.7)(0.613)(0.405)}{1.2} = -46.9\,N}$$

$\sum M_x = 0$ ($\hat{\imath}$ components) $\Rightarrow -\|F_{CD}\|(0.208) + 1.2\,B_y - 294.3 = 0$

$$\boxed{B_y = \frac{(226.7)(0.208) + 294.3}{1.2} = 284.5\,N}$$

3 unknowns left A_x, A_y, A_z .. 3 equations too $\sum F_x = 0$ $\sum F_y = 0$ $\sum F_z = 0$

$\sum F_x = 0 \Rightarrow A_x + B_x + F_{CD_x} + W_x = 0$ or $A_x = -B_x - F_{CD_x} - W_x$

$$\Rightarrow A_x = +46.9 - \|F_{CD}\|(0.828) + 0$$

$$\boxed{A_x = +46.9 - (226.7)(0.828) = -140.8\,N}$$

$\sum F_y = 0 \Rightarrow A_y = -B_y - F_{CD_y} - W_y$

$$= -284.5 - (226.7)(0.386) + 490.5$$

$$\boxed{A_y = +118.5\,N}$$

$\sum F_z = 0 \Rightarrow A_z = -B_z - F_{CD_z} - W_z$

$$= 0 - (226.7)(0.405) + 0$$

$$\boxed{A_z = -91.8\,N}$$

and this completes the solution

Note It is important to be careful of the sign of quantities.

If vector components are DRAWN ON F.B. Diag along positive sense of axes, then, for example $\vec{A} = A_x\hat{\imath} + A_y\hat{\jmath} + A_y\hat{k}$. Any/All of these components may turn out to be negative if actual direction is opposite (e.g. Ax here).

By contrast we DREW $\vec{W}$ downwards, so $\vec{W} = -W\hat{\jmath}$ where

W is a positive number (490.5 in this case), but directed in negative sense of y.