A(8,0,0) B(0,3,8) C(0,n,-6) D(0,-4,0)

3.67 F = 2i (kip) en A

$r_{AB} = -8i + 3j + 8k$

$|r_{AB}| = 11.704$

$e_{AB} = -0.683i + 0.256j + 0.683k$

$r_{AC} = -8i + 2j - 6k$

$|r_{AC}| = 10.198$

$e_{AC} = -0.784i + 0.196j - 0.588k$

$r_{AD} = -8i - 4j + 0k$

$|r_{AD}| = 8.944$

$e_{AD} = -0.894i - 0.447j$

$F_x = 0 = -0.683i|T_{AB}| - 0.784i|T_{AC}| - 0.894i|T_{AD}| = -2000 lb$

$F_y = 0 = 0.256|T_{AB}| + 0.196|T_{AC}| - 0.447|T_{AD}| = 0$

$F_z = 0 = 0.683|T_{AB}| - 0.588|T_{AC}| + 0|T_{AD}| = 0$

$T_{AB} = 780.944 lbf$

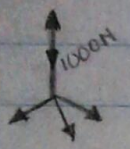
$T_{AC} = 907.118 lbf$

$T_{AD} = 845.004 lbf$

A(0, 8, 0) B(16, 0, 16) C(10, 0, -12) D(-16, 0, 4)

3.68 $m = 90\,Kg$ $F_g = 100DN$ $E = 10N$

$mg = 882.9N$



$r_{AB} = 16i - 8j + 16k$

$|r_{AB}| = 24$

$C_{AB} = 0.666i - 0.333j + 0.666k$

$r_{AC} = 10i - 8j - 12k$

$|r_{AC}| = 17.549$

$C_{AC} = 0.569i - 0.455j - 0.683k$

$r_{AD} = -16i - 8j + 4k$

$|r_{AD}| = 18.33$

$C_{AD} = -0.872i - 0.436j + 0.218$

$F_x = 0 = 0.666|T_{AB}| + 0.569|T_{AC}| - 0.872|T_{AD}| = 0$

$F_y = 0 = -0.333|T_{AB}| - 0.455|T_{AC}| - 0.436|T_{AD}| = -117.1$

$F_z = 0 = 0.666|T_{AB}| - 0.683|T_{AC}| + 0.218|T_{AD}| = 0$

$T_{AB} = \frac{64.89}{40} \simeq 2$ //

$T_{AC} = \frac{99.90}{40} \simeq 3$ //

$T_{AD} = 114.75 \simeq 3$ //

3.70

A(0,10,0) B(-4,0,6) C(8,0,6) D(0,0,-8)

$W = 20{,}000$ lb

$\mathbf{r}_{AB} = -4\mathbf{i} - 10\mathbf{j} + 6\mathbf{k}$

$|\mathbf{r}_{AB}| = 12.328$

$\mathbf{e}_{AB} = -0.324\mathbf{i} - 0.811\mathbf{j} + 0.486\mathbf{k}$

$\mathbf{r}_{AC} = 8\mathbf{i} - 10\mathbf{j} + 6\mathbf{k}$

$|\mathbf{r}_{AC}| = 14.142$

$\mathbf{e}_{AC} = 0.565\mathbf{i} - 0.707\mathbf{j} + 0.424\mathbf{k}$

$\mathbf{r}_{AD} = 0\mathbf{i} - 10\mathbf{j} - 8\mathbf{k}$

$|\mathbf{r}_{AD}| = 12.845$

$\mathbf{e}_{AD} = 0\mathbf{i} - 0.778 - 0.622\mathbf{k}$

$F_x = 0 = -0.324|T_{AB}| + 0.565|T_{AC}| + 0|T_{AD}| = 0$

$F_y = 0 = -0.811|T_{AB}| - 0.707|T_{AC}| - 0.778|T_{AD}| = -20{,}000$ lb

$F_z = 0 = 0.486|T_{AB}| + 0.424|T_{AC}| - 0.622|T_{AD}| = 0$

$T_{AB} = 9396$ lb $\simeq 9390$ lb

$T_{AC} = 5388$ lb $\simeq 5390$ lb

$T_{AD} = 11{,}015$ lb $\simeq 10{,}980$ lb