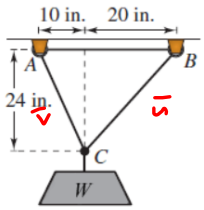
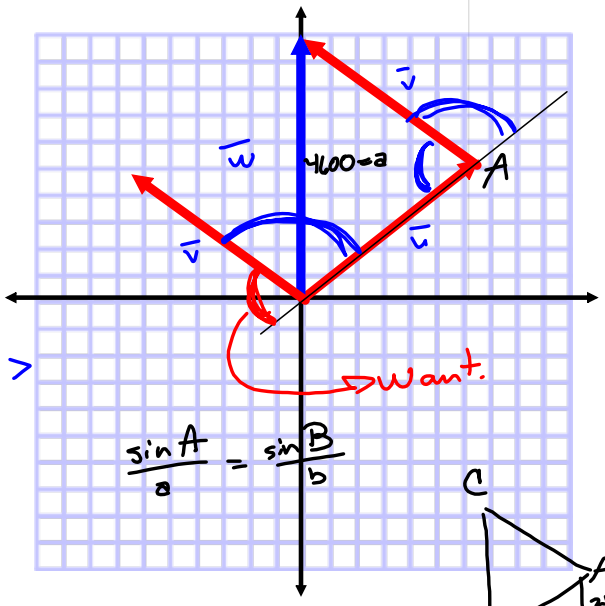
Use the figure to determine the tension in each cable supporting the load. (Round your answers to one decimal point.)

W = 4600 lb

tension in $\overline{AC}$ 3103 ✗ 3322.2 lb

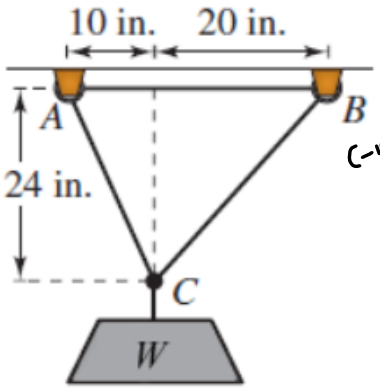
tension in $\overline{BC}$ 1996 ✓ 1996.0 lb

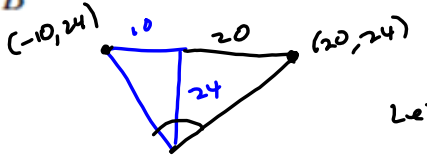




$\bar{w} = \bar{u} + \bar{v} = \langle 0, 4600 \rangle$

$\frac{\sin A}{a} = \frac{\sin B}{b}$





Let's come back.

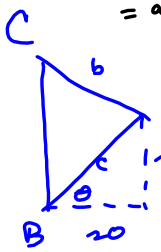
$= \arctan\left(\frac{24}{20}\right)$

$= \arctan\left(\frac{6}{5}\right)$

180-Ans-1.30993247 100

Ans-10 90

tan⁻¹(6/5) 50.19442891



$\theta = \arctan\left(\frac{24}{20}\right)$

$B = 90° - \theta$

100

Ans-10 90

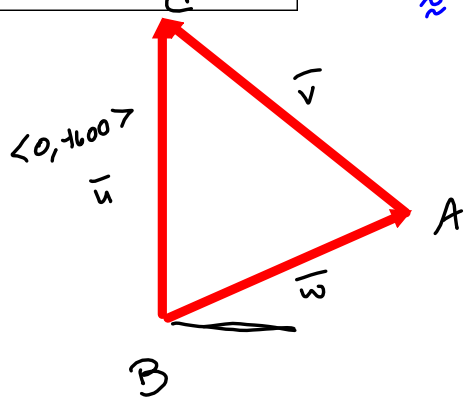
tan⁻¹(6/5) 50.19442891

Ans-90 -39.80557109

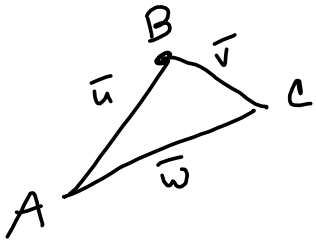
$B \approx 39.80557109°$

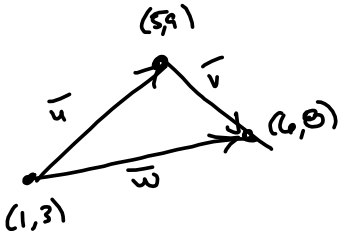
$\rightarrow b = \frac{a \sin B}{\sin A} \approx \frac{(4600)(\sin B)}{\sin A}$

$\approx$



```
cos⁻¹(5/√(26))
      11.30993247
cos⁻¹(1/√(13))
      73.89788625
180-Ans-11.30993
247
      94.79218128
```

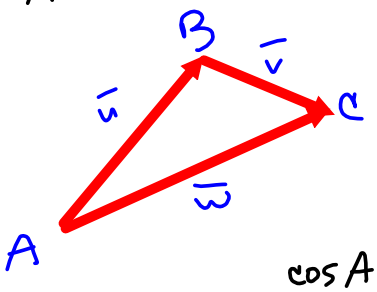




$B \approx 94.792^\circ \approx 94.79^\circ$

$C \approx 73.897886^\circ \approx 73.90^\circ$

$A \approx 11.30993247^\circ \approx 11.31^\circ$



$\bar{u} = \langle 4, 6 \rangle, \quad \|\bar{u}\| = 2\sqrt{13}$

$\bar{v} = \langle 1, -1 \rangle, \quad \|\bar{v}\| = \sqrt{2}$

$\bar{w} = \langle 5, 5 \rangle, \quad \|\bar{w}\| = 5\sqrt{2}$

$$\cos A = \frac{\bar{u} \cdot \bar{w}}{\|\bar{u}\| \|\bar{w}\|} = \frac{20 + 30}{(2\sqrt{13})(5\sqrt{2})} = \frac{50}{10\sqrt{26}} = \frac{5}{\sqrt{26}}$$

$-\bar{u} = \langle -4, -6 \rangle$

$\bar{v} = \langle 1, -1 \rangle$

$-4 + 6 = 2$

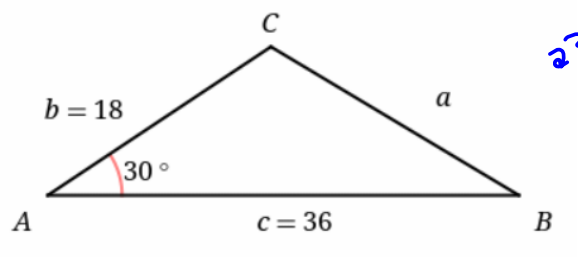
$$\cos B = \frac{(-\bar{u}) \cdot (\bar{v})}{\|\bar{u}\| \|\bar{v}\|} = \frac{2}{(2\sqrt{13})(\sqrt{2})} = \frac{1}{\sqrt{26}}$$

Fernando sez

Thx!

90

```
cos⁻¹(1/√(26))
      78.69006753
180-Ans-1.309932
47
                100
Ans-10
                 90
```



$a^2 = b^2 + c^2 - 2bc\cos A$

$= 18^2 + 36^2 - 2(18)(36)\cos 30^\circ$

≈ 22.31

$\frac{\sin B}{18} = \frac{\sin A}{a} \Rightarrow \sin B = \frac{18\sin 30^\circ}{22.3076\ldots}$

$\approx .403\ldots \Rightarrow$

$a \approx 22.31$

$B \approx 23.79^\circ$

$C \approx 126.21^\circ$

```
     22.30764615
18sin(30)/Ans
      .4034491107
sin⁻¹(Ans)
     23.79397689  ≈ B
Ans+30-180
    -126.2060231  ≈ C
```

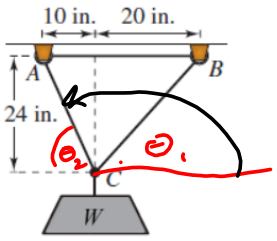
Final shot at that first exercise I sucked at.

Use the figure to determine the tension in each cable supporting the load. (Round your answers to one decimal point.)

W = 4600 lb

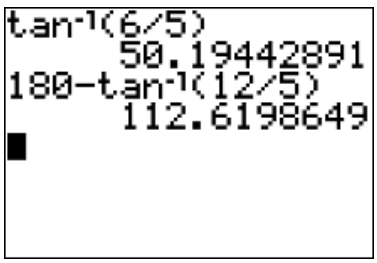
tension in $\overline{AC}$ 3103 ✗ 3322.2 lb

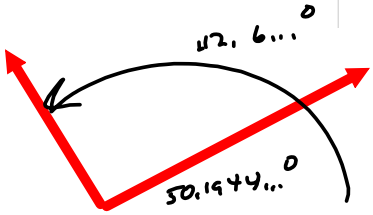
tension in $\overline{BC}$ 1996 ✓ 1996.0 lb

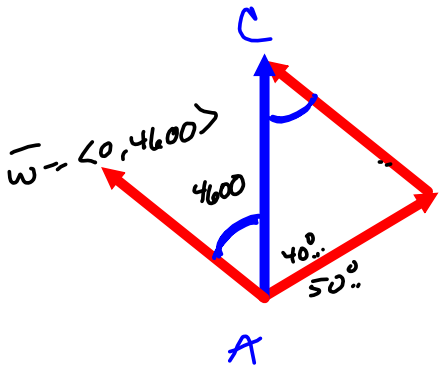


$\theta_1 = \arctan\left(\frac{24}{20}\right) = \arctan\left(\frac{6}{5}\right)$

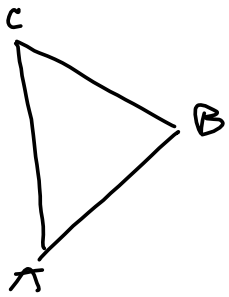
$\theta_2 = 180° - \arctan\left(\frac{24}{10}\right) = 180° - \arctan\left(\frac{12}{5}\right)$







$C \approx 90° + 112...° \approx 22.619...°$



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$A \approx 39.80557109°$

$C \approx 22.61980649°$

$B = 180° - A - C$

Then use $b = 4600$ & Law of sines.

The lengths of the sides are the magnitude of the forces