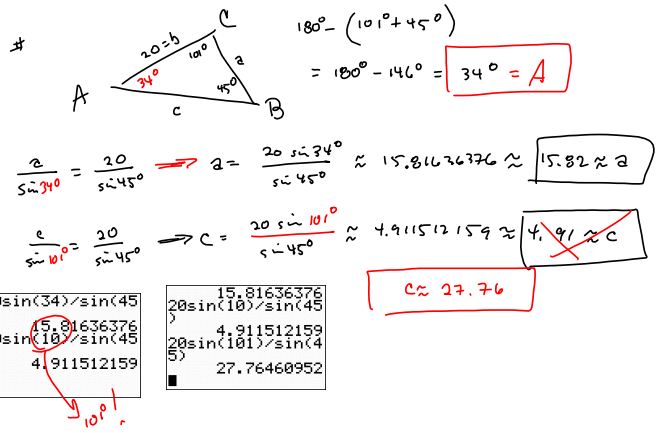
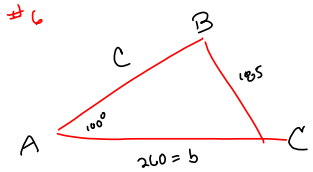
Test 3 Discussion

Re-Done for WebAssign Testing

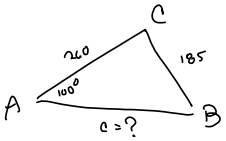
Some of the following is taken from live lecture. Some from asynchronous video.



#6



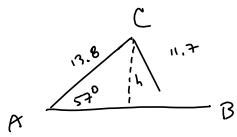
Easier for me to see it this way



Impossible!
A triangle can only have at most one obtuse angle!
But a = 185 < b = 260!
And the bigger side is opposite the bigger angle!

#7

$A = 57,\quad a = 11.7,\quad b = 13.8$

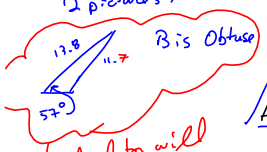


$\frac{h}{13.8} = \sin 57°$

$h = 13.8 \sin 57° \approx 11.57$

$11.57 < 11.7 = a < 13.8 = b$

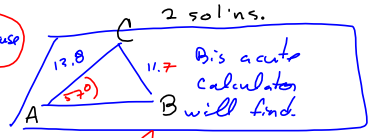
2 pictures:



B is Obtuse

Calculator will help. But human needs to do $180° - \text{Acute } B$ from

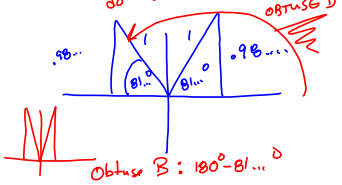
2 soln's.



B is acute
Calculator will find.

$\frac{\sin B}{13.8} = \frac{\sin 57°}{11.7}$

$\sin B = \frac{13.8 \sin 57°}{11.7} \approx .98\ 9\ 2011827$




```
13.8sin(57)
          11.57365384
13.8sin(57)/11.7
          .9892011827
sin⁻¹(Ans)
          81.57213976
```

Acute B is $\approx 81.57°$

Obtuse B: $180° - 81...°$

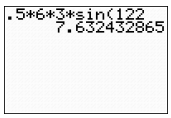
≈ 98.42786024

$\approx 98.43° \approx$ Obtuse B

```
13.8sin(57)/11.7
          .9892011827
sin⁻¹(Ans)
          81.57213976
Ans-180
         -98.42786024
```

#8 $122^\circ = A$, $b = 6$, $c = 3$

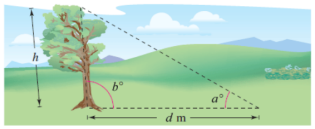
$\text{Area} = \frac{1}{2}bc\sin A = \frac{1}{2}(6)(3)\sin 122^\circ \approx 7.632432865$

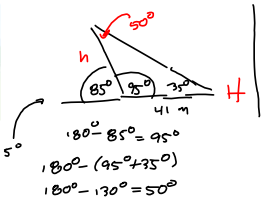


Apr 2-12:43 PM

#9

A tree grows at an angle of 5° from the vertical due to prevailing winds. At a point d = 41 meters from the base of the tree, the angle of elevation to the top of the tree is a = 35° (see figure).





(a) Write an equation that you can use to find the height h of the tree.

$\frac{h}{\sin(\quad°)} = \frac{41}{\sin(\quad°)}$

(b) Find the height h of the tree. (Round your answer to one decimal place.)

h = ____ m

$\frac{h}{\sin 35^\circ} = \frac{41}{\sin 50^\circ}$

$h = \frac{41 \sin 35^\circ}{\sin 50^\circ} \approx$

```
41sin(35)/sin(50
)
      30.6987853
```