

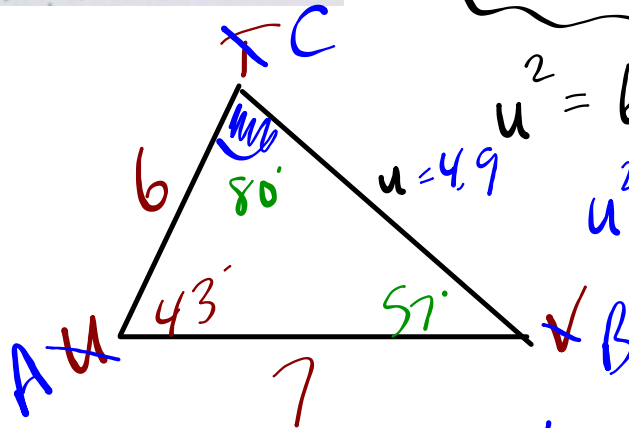
Homework Questions? #7?

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

$\cos A = \frac{b^2 + c^2 - a^2}{2bc}$ Law of Cosines

angle?

7 Solve each triangle.
 (a) $\triangle TUV$, $t = 7$, $v = 6$, $\angle U = 43^\circ$.



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

$$u^2 = 6^2 + 7^2 - 2(6)(7)\cos 43^\circ$$

$$u^2 = 6^2 + 7^2 - 2 \cdot 6 \cdot 7 \cdot \cos(43^\circ)$$

$$= 23.56628906$$

$$\sqrt{\text{Ans}} = 4.854512237$$

$$u = 4.9$$

$$\angle V = 57^\circ$$

$$\frac{7 \sin T}{7} = \frac{7 \sin 43^\circ}{4.9}$$

$$\sin^{-1} \sin T = (0.9834)$$

$$\angle T = 80^\circ$$

OR

$$\cos T = \frac{6^2 + 4.9^2 - 7^2}{2(6)(4.9)}$$

$$\cos^{-1} \cos T = \left(\frac{11.01}{58.8} \right)$$

$$\angle T = 79^\circ$$

Application Questions - Law of Cosines

Ask yourself...

1. What am I given?
2. What am I trying to find?



EXAMPLE...

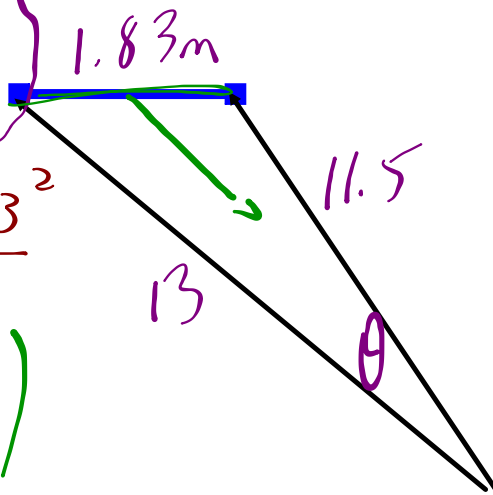
A hockey net is 1.83m wide. A player shoots from a point where the puck is 13m from one goal post and 11.5m from the other. Within what angle must he make his shot to score?

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

$$\cos \theta = \frac{13^2 + 11.5^2 - 1.83^2}{2(13)(11.5)}$$

$$\cos \theta = \frac{297.9011}{299}$$

$$\theta = 5$$



Example #2:

From T, a golfer aims a ball towards the hole at H which is 100m away. But the ball actually sliced in a direction 30° off course and lands at M, 60m away. If the next shot is hit 50 m towards the hole, will the ball go in the hole?

sketch a diagram

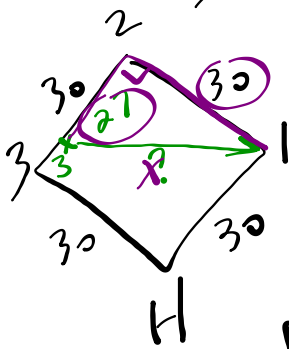
$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$t^2 = 60^2 + 100^2 - 2(60)(100)\cos 30^\circ$$

$60^2 + 100^2 - 2 * 60 * 100 \cos(30)$ 3207.695155 $\sqrt{\text{Ans}}$ 56.63651785

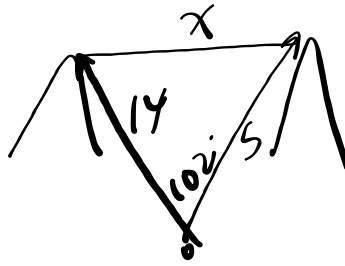
$t = 56.6 \text{ m}$
 $- 50$
 \hline
 6.6 m
 (away)

HW: 10.12



#1 → Perimeter (add up all sides)

#2
#3.



#4.
#5
#6