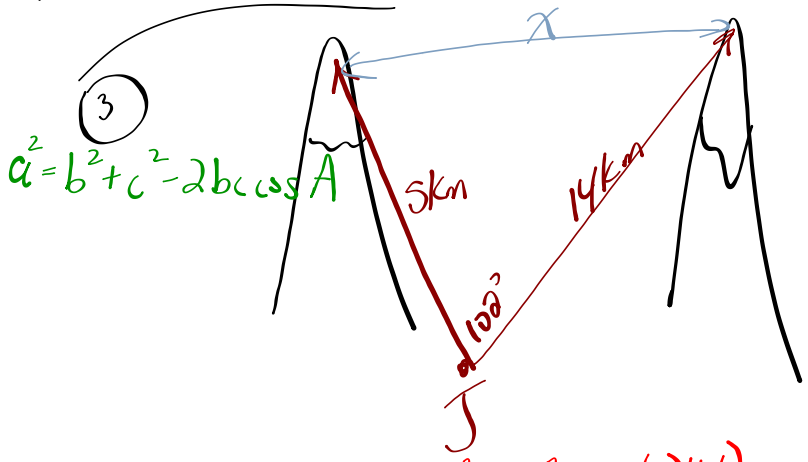
Homework ??? 10.12 - 3,



(3)

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

$x^2 = 5^2 + 14^2 - 2(5)(14)\cos 102$

$x^2 =$

```
5²+14²-2*5*14*co
s(102)
        250.1076367
√(Ans
        15.81479171
```

$x =$

```
15²+21²-2*15*21*
cos(130)
        1070.956194
√(Ans
        32.72546706
```

```
350²+200²-2*350*
200*cos(18)
        29352.08772
√(Ans
        171.32451
```

7c) 10, 11

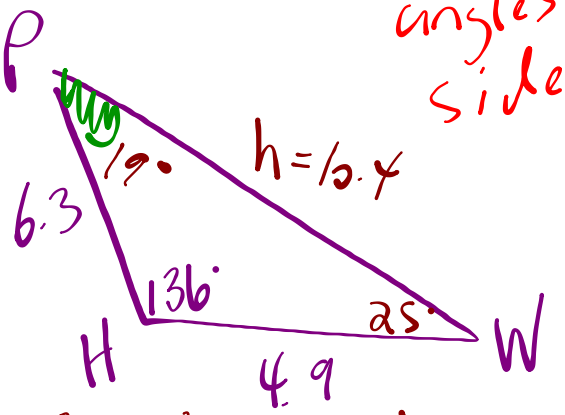
SOLVE → find all angles & sides

ΔPHW

$P = 4.9$

$W = 6.3$

$\angle H = 136°$



$h^2 = 6.3^2 + 4.9^2 - 2(6.3)(4.9)\cos 136°$

h^2

```
6.3²+4.9²-2*6.3*
4.9*cos(136)
        108.1120393
√(Ans
        10.39769394
```

$h =$ $h = 10.4$

$\frac{4.9 \sin P}{4.9} = \frac{4.9 \sin 136}{10.4}$

$\sin^{-1} \sin P = \sin^{-1}(0.3273)$

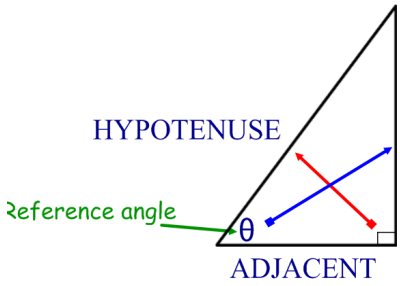
$\angle P = 19°$

$\angle W = 180 - 136 - 19$

$\angle W = 25°$

REVIEW - What formula do I use? Ask yourself...

- Is it a right triangle? If Yes, then...



Primary Trigonometric Ratios

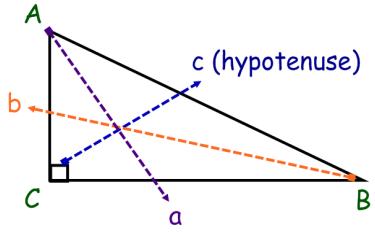
$$\sin\theta = \frac{opp}{hyp}$$

$$\cos\theta = \frac{adj}{hyp}$$

$$\tan\theta = \frac{opp}{adj}$$

Memory Aid: "SOH CAH TOA"

Pythagorean Theorem



$$c^2 = a^2 + b^2$$

- If you are finding a side, do you have **SAS**? If Yes, then...

Law of Cosines

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

- If you are finding an angle, do you have **SSS**? If Yes, then...

Law of Cosines (rearranged)

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

- Anything else...use your Law of Sines!

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

"when looking for a side"

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

"when looking for an angle"