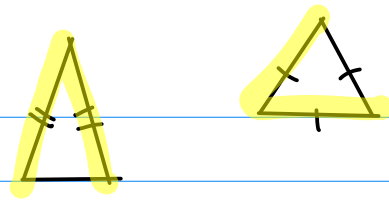
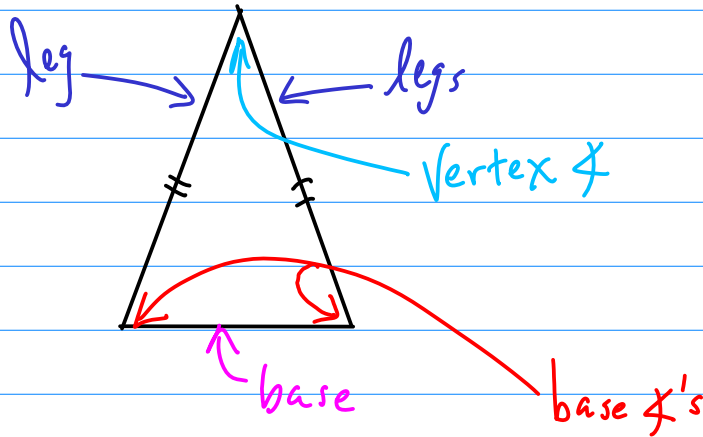


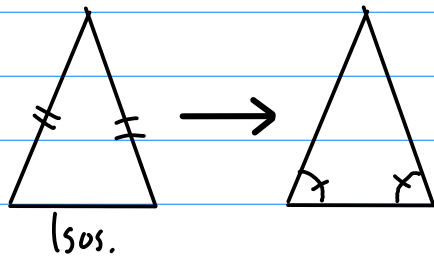
## §4.2: Isosceles $\Delta$ 's



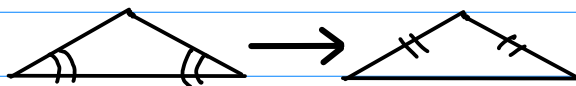
\* Def'n of Isosceles  $\Delta$ : A  $\Delta$  w/at least 2  $\cong$  sides.



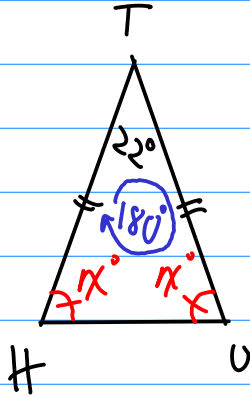
\* Isosceles  $\Delta$  Conjecture: If a  $\Delta$  is isosceles, then the base  $\sphericalangle$ 's are  $\cong$ .



\* Converse of Isos.  $\Delta$  Conjecture: If 2  $\sphericalangle$ 's of a  $\Delta$  are  $\cong$ , then the  $\Delta$  is isosceles.



Ex:

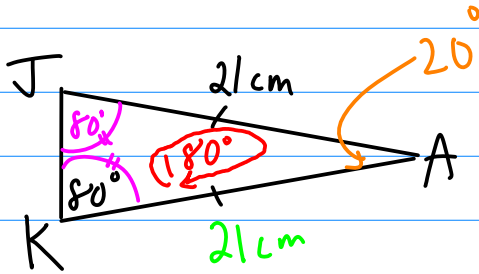


$m\angle H = ?$

$$\begin{aligned}
 22^\circ + x^\circ + x^\circ &= 180^\circ \\
 22 + 2x &= 180 \\
 -22 &\quad -22 \\
 \hline
 2x &= 158 \\
 \underline{\quad} &\quad \underline{\quad} \\
 x &= 79
 \end{aligned}$$

$$\boxed{m\angle H = 79^\circ}$$

Ex:



Perimeter of  $\triangle JAK$  is 49.5 cm

$$\begin{aligned}
 m\angle J &= 80^\circ \\
 m\angle A &= 20^\circ \\
 JK &= 7.5 \text{ cm}
 \end{aligned}$$

49.5 cm

Sides

$$\begin{aligned}
 P &= 21 \text{ cm} + 21 \text{ cm} + JK \\
 49.5 \text{ cm} &= 21 \text{ cm} + 21 \text{ cm} + JK \\
 49.5 \text{ cm} &= 42 \text{ cm} + JK \\
 -42.0 \text{ cm} &\quad -42 \text{ cm} \\
 \hline
 7.5 \text{ cm} &= JK
 \end{aligned}$$

Angles

$$\begin{aligned}
 80^\circ + 80^\circ + m\angle A &= 180^\circ \\
 160^\circ + m\angle A &= 180^\circ \\
 -160^\circ &\quad -160^\circ \\
 \hline
 m\angle A &= 20^\circ
 \end{aligned}$$