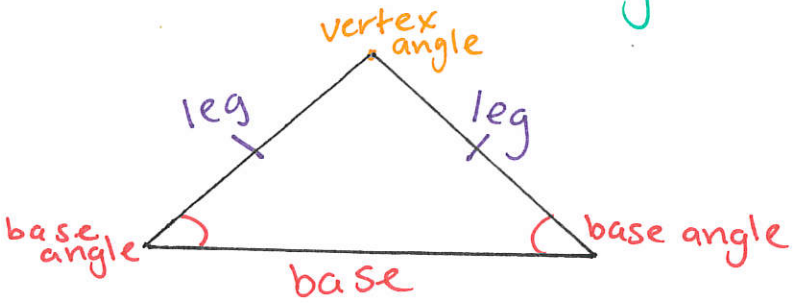
4-6 Isosceles and Equilateral Triangles

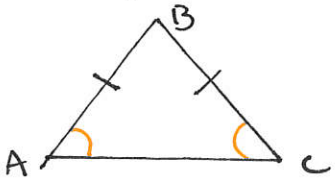
Isosceles Triangle



Isosceles △ Theorem

If a △ has two ≅ sides, then its base ∠s are ≅.

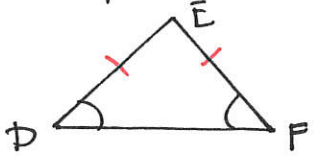
If $\overline{AB} \cong \overline{CB}$,
then $\angle A \cong \angle C$.



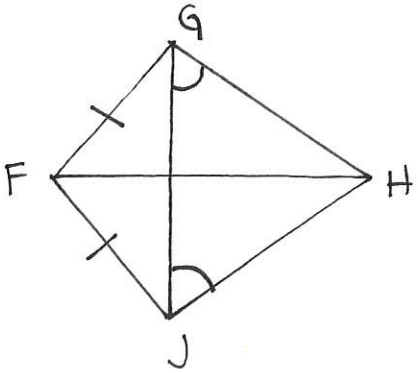
Converse of Isosceles △ Theorem

If two angles of a △ are ≅, then it is isosceles.

If $\angle D \cong \angle F$,
then $\overline{DE} \cong \overline{FE}$.



Ex: Name two unmarked of each: Justify.

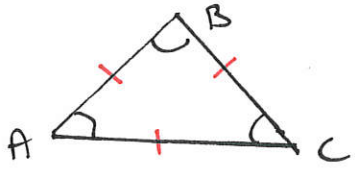


a) angles

b) sides

Corollaries to Isosceles △ Theorem

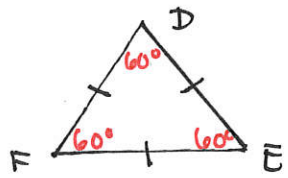
→ A △ is equilateral if and only if it is equiangular.



If $\angle A \cong \angle B \cong \angle C$,
then $\overline{AB} \cong \overline{BC} \cong \overline{CA}$.

→ Each angle of an equilateral △ measures 60°.

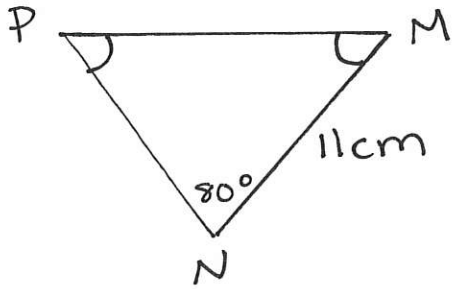
If $\overline{DE} \cong \overline{EF} \cong \overline{FD}$,
then $m\angle D = m\angle E = m\angle F = 60$.



Ex: Find each measure.

a) $m\angle M =$

b) $PN =$



Ex: Find the variables.