Geometry   4.6
Use properties of isosceles* triangles
Use properties of equilateral* triangles   *6th grade standard
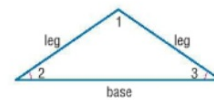isosceles
leg
base
vertex angle
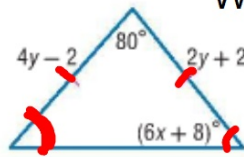base angle
equilateral
corollary

scrambled proofs

3. Find the value of each variable.

80°

$4y - 2$ $2y + 2$

$(6x + 8)°$

What kind of triangle is it?

$x = 7$

$y = 2$

$4y - 2 = 2y + 2$

$-2y + 2 \quad -2y + 2$

$\dfrac{2y}{2} = \dfrac{4}{2}$

$80 + 6x + 8 + 6x + 8 = 180$

$12x + 96 = 180$

$12x = 84$

$x = 7$

scrambled proofs

PROOF Write a two-column proof.

Given: $\triangle ABC$ is isosceles; $\overline{EB}$ bisects $\angle ABC$.

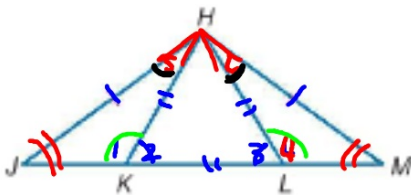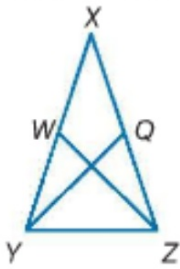**Prove:** $\triangle ABE \cong \triangle CBE$
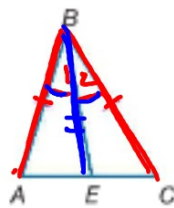
SAS

SSS
SAS
ASA
AAS

23. Given: $\triangle HJM$ is an isosceles triangle, and $\triangle HKL$ is an equilateral triangle. $\angle JKH$ and $\angle HKL$ and $\angle HLK$ and $\angle MLH$ are supplementary.

Prove: $\angle JHK \cong \angle MHL$

$\angle J \cong \angle M$

$\angle 1 \cong \angle 4$

$\triangle JKH \cong \triangle MLH$ AAS

$\angle 5 \cong \angle 6$ CPCTC

24. Given: $\overline{XY} \cong \overline{XZ}$

W is the midpoint of $\overline{XY}$.

Q is the midpoint of $\overline{XZ}$.

Prove: $\overline{WZ} \cong \overline{QY}$

Can we prove 2 triangles congruent?
CPCTC

WB 4.6   st. + prac.