Geometry – Unit 5 Practice
Angle Sum of a Triangle
G.CO.C.10

Name: _____!

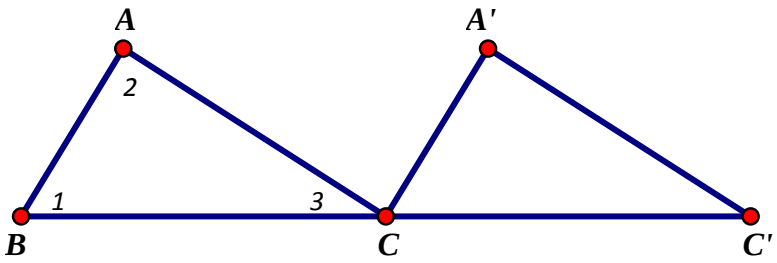
Date: _____ Pd: ____

Quick Concept: The sum of the interior angles of a triangle is 180°.

1) **Activity – Cut out any triangle from a piece of paper. Rip the 3 angles off the triangle and then place all three vertices together. What do you notice about the three triangles of a triangle?**

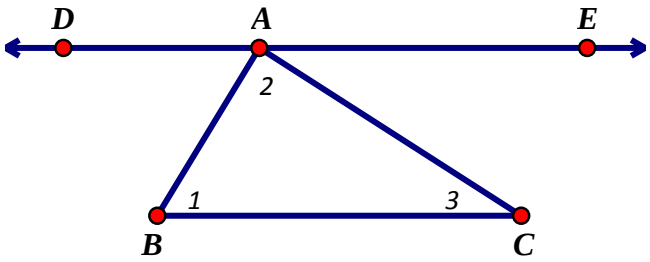
2) **Jennifer is trying to prove that the three interior angles of a triangle sum to 180°. She begins by translating ΔABC by vector $\langle \overrightarrow{BC} \rangle$ and then she states that $\angle BCC'$ is a straight angle because the vector extended side $\overline{BC}$ and that $\overline{BA} \parallel \overline{CA'}$ because translations create parallel lines. She also states that $\angle 1 \cong \angle A'CC'$ because translations are isometric and $\angle 3 \cong \angle 3$ because of the reflexive property.**

How would she complete this proof?



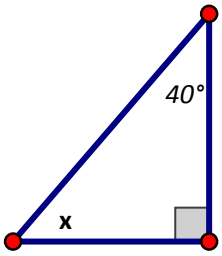
3) **Randy is trying to prove that three interior angles of a triangle sum to 180°. He begins by drawing in $\overleftrightarrow{DE}$ parallel to side $\overline{BC}$ through point *A* and then he states the $\angle DAE$ is a straight angle because of the opposite rays $\overrightarrow{AD}$ & $\overrightarrow{AE}$ on $\overleftrightarrow{DE}$. He also states that $\angle 1 \cong \angle DAB$ because parallel lines makes alternate interior angles congruent and $\angle 2 \cong \angle 2$ because of the reflective property.**

How would he complete this proof?



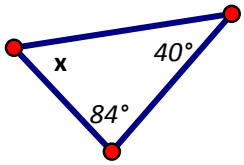
4) Find the value of *x*.

a)



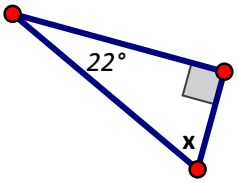
***x* = _____**

b)



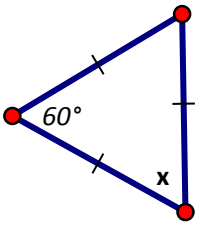
***x* = _____**

c)



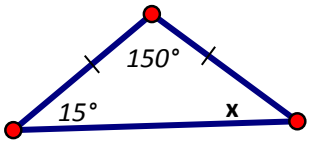
***x* = _____**

d)



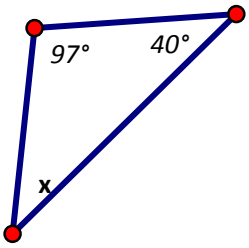
***x* = _____**

e)



***x* = _____**

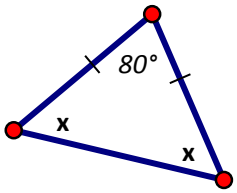
f)



***x* = _____**

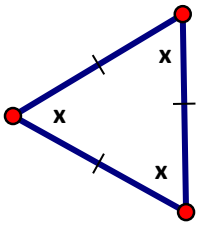
5) Find the value of *x*.

a)



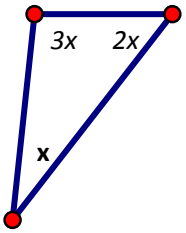
***x* = _____**

b)



***x* = _____**

c)



***x* = _____**

6) If the ratio of the angles of a triangle is 1:2:9. What is the measurement of each angle and what is the best classification for the triangle?

7) If the ratio of the angles of a triangle is 1:2:1. What is the measurement of each angle and what is the best classification for the triangle?