**Geometry Lesson 2-3: Students will recognize which conditions guarantee, and which do not guarantee, congruence for two triangles.**

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**[1st] A refrigerator is regularly**

**changing temperature. After the**

**temperature goes up 3o, down 7o,**

**and up 6o, it is 51o. What was**

**the temperature before these**

**three changes?**

**[2nd] Suppose three segments**

**are 0.75 inches, 1.5 inches, and**

**1.5 inches long.**

**🡪How many different triangles**

**are possible with these conditions?**

**🡪What type of triangle is this?**

**\*JUSTIFY your responses.**

**[3rd] Next, suppose you have**

**two given segments measuring**

**1** $\frac{3}{4}$ **inches and 1** $\frac{1}{2}$ **inches, and they**

**include (which means surround) an**

**angle of 50o. How many different**

**triangles are possible with these**

**conditions? JUSTIFY your response.**

**[4th] Now suppose you have**

**two given segments measuring**

**1** $\frac{3}{4}$ **inches and 1** $\frac{1}{2}$ **inches, and they**

**do NOT include a 50o angle; see**

**the diagram at the right. A non-**

**included angle must be 50o.**

**HOW MANY DIFFERENT TRIANGLES**

**ARE POSSIBLE WITH THESE CONDITIONS?**

**[5th] So far we have three working**

**postulates for triangle congruence:**

**[6th] \_\_\_\_ \_\_\_\_\_ \_\_\_\_\_\_ is NOT a valid**

**postulate: WHY?**

****

**[7th] Examine each pair of triangles.**

**Determine which pairs are congruent.**

**Justify your responses.**

****

**[8th] What must be true so that**

****$\overbar{CD}$ **is the perpendicular bisector**

**of** $\overbar{AB}$**?**