**Geometry Lesson 2-2: Students will prove that vertical angles are congruent; they will also recognize the Angle-Side-Angle and Side-Angle-Side Postulates for congruent triangles.**

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

**GEOMETRY NOTES 2-2: Vertical Angle Theorem , Side-Angle-Side Postulate, Angle-Side-Angle Postulate**

**[1st] This instrument can get you**

**through the woods or around an arc.**

**In the diagram, two lines intersect to**

**form four angles.**

**[2nd] If you place a protractor at the**

**point where both lines intersect,**

**m/ 1 + m/ 4 = ? .**

**[3rd] If you place a protractor at the**

**point where both lines intersect,**

**m/ 1 + m/ 2 = ? .**

**[4th] What is greater, m/ 1 + m/ 2 OR Vertical Angle Theorem**

**m/ 1 + m/ 4?**

**[5th] Complete the following m/ 1 + m/ 2 = \_\_\_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**justification (proof):**

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

 **m/ 1 + m/ 4 = \_\_\_\_\_\_\_\_\_ because\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

 **m/ 1 + m/ 2 = m/ 1 + m/ 4 because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

 **If you subtract m/ 1 from both sides of the equation, then**

 **\_\_\_\_\_\_\_\_\_\_\_\_\_. Therefore, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**[6th] Suppose you have a triangle:**

**You are given one side is 1** $\frac{1}{2}$ **inches**

**and it is surrounded by a 42o angle**

**and a 67o angle.**

**\*HOW MANY TRIANGLES ARE**

**POSSIBLE with these conditions?**

**Try to draw as many different**

**triangles as you can.**

**[7th] Suppose you have a triangle**

**and you are given one side length**

**and the two surrounding angles.**

**HOW MANY TRIANGLES ARE POSSIBLE?**

***Now look at a different situation*.**

**[8th] Suppose you are given two sides**

**are, say, 1** $\frac{1}{8}$ **inches and 2 inches, AND**

**the included angle (between them)**

**is 47o. HOW MANY TRIANGLES ARE**

**POSSIBLE with these conditions?**

**[9th] Suppose the two given sides**

**are 2.5 inches and 4.25 inches, and**

**suppose the angle between them**

**is 19o. How many triangles with these**

**features are possible?**

**[10th] What is the Angle-Side-Angle**

**Postulate?**

**[11th] What is the Side-Angle-Side**

**Postulate?**

**[12th] REVIEW: What is the**

**Side-Side-Side Postulate?**