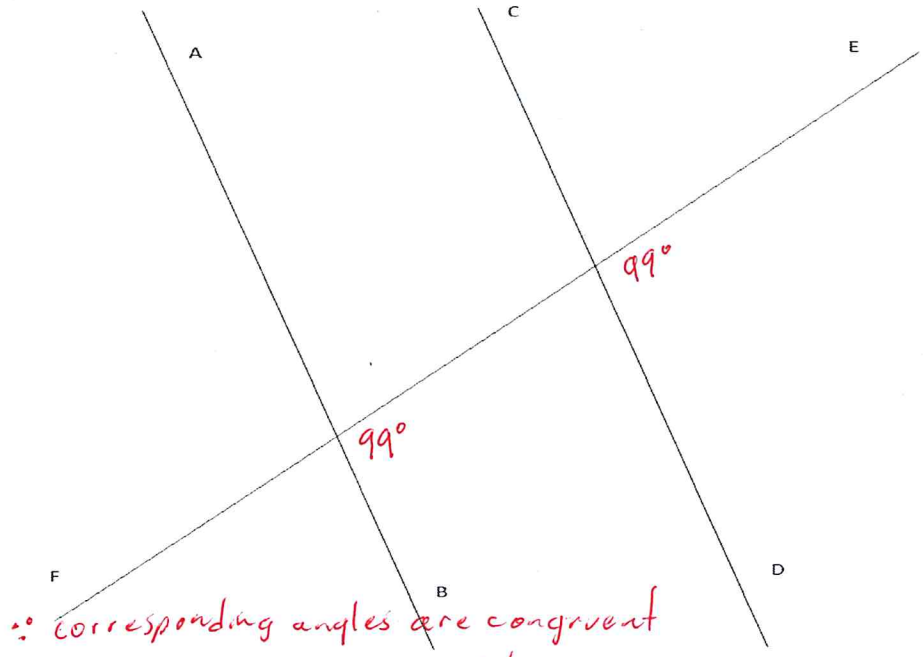
Grade 7/8 Math Geometry – **Proving Parallels by Transversal Angles**

Name: Key Class:_____ Date: _____

We have learned that parallel lines that are traversed by another line have certain angle relationships (Corresponding, Alternating Interior, Supplementary, etc.). These angles are paired like this because the two lines are parallel. If the lines are not parallel, then the angles will not show that pattern. You can use this to prove if the lines are parallel or not.

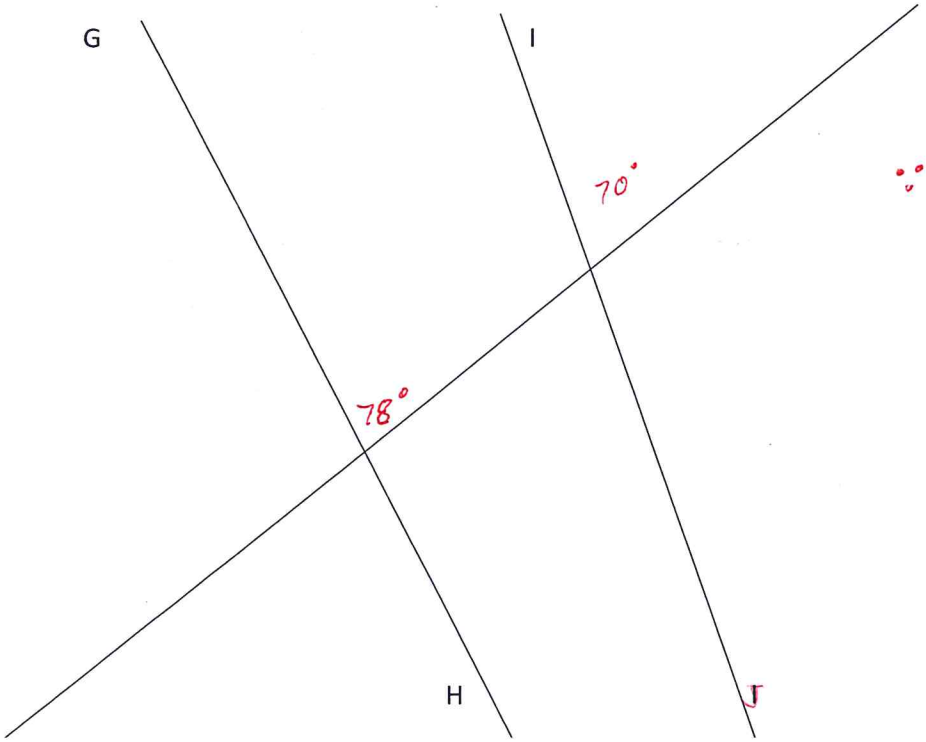
1. Measure all the angles and determine whether the lines AB and ~~BC~~ CD are parallel.



∵ corresponding angles are congruent

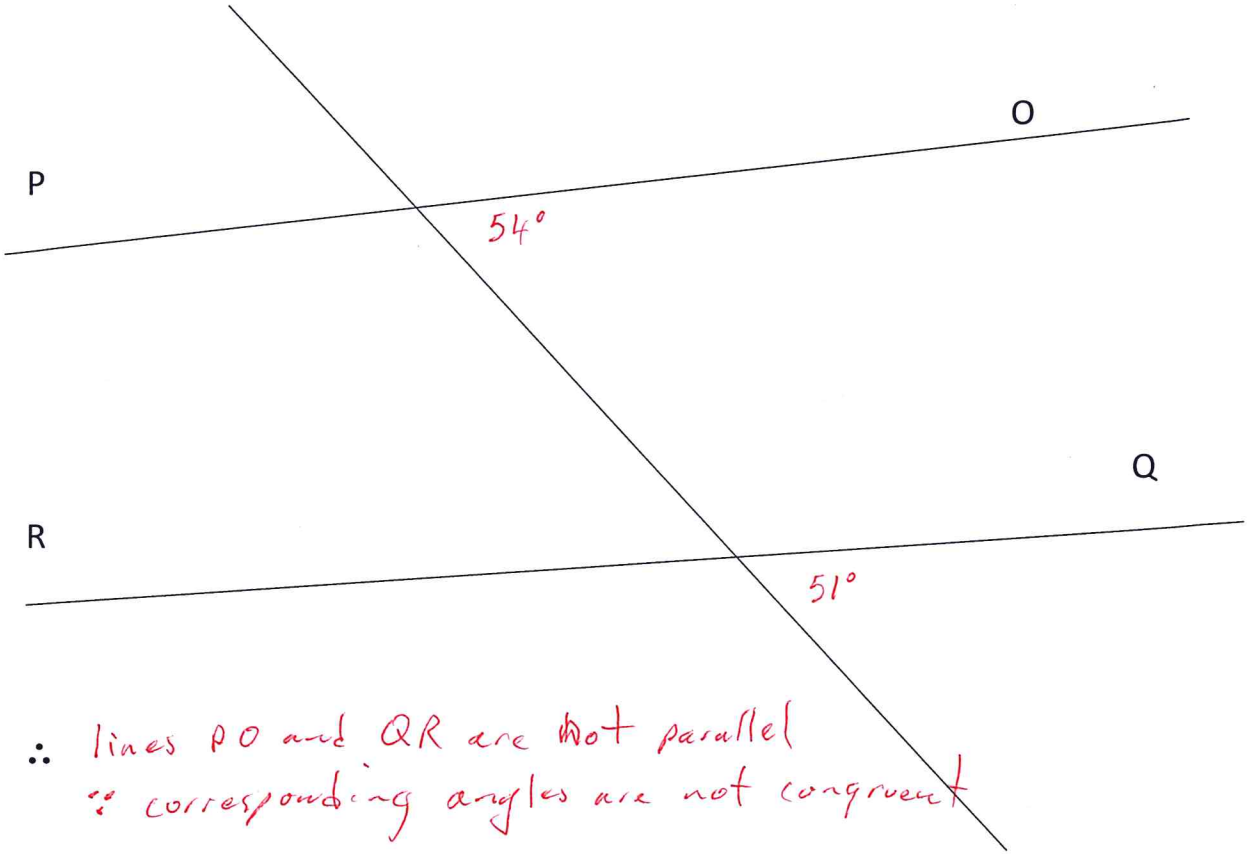
∴ lines AB and CD are parallel

2. Are lines GH and IJ Parallel? Explain



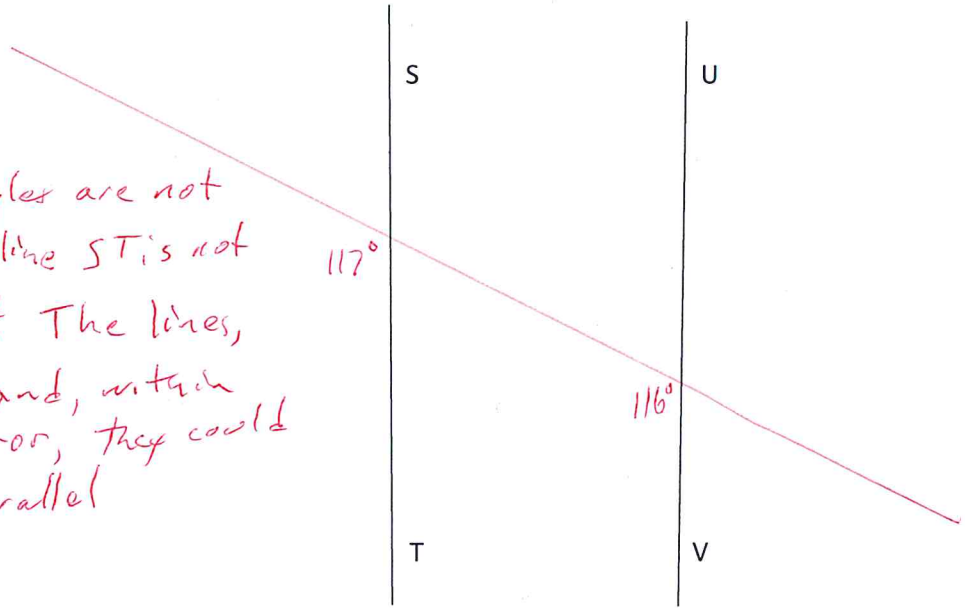
∵ corresponding angles are not congruent, ∴ the lines GH and IJ are not parallel

3. Find if line PO is parallel to line QR.



∴ lines PO and QR are not parallel
∵ corresponding angles are not congruent

4. Prove that line ST is either parallel to line UV or is not parallel.



∵ corresponding angles are not congruent, the line ST is not parallel to UV. * The lines are very close and, within measurement error, they could be seen as parallel

∴ The lines could be seen as parallel but also could be stated as non parallel.