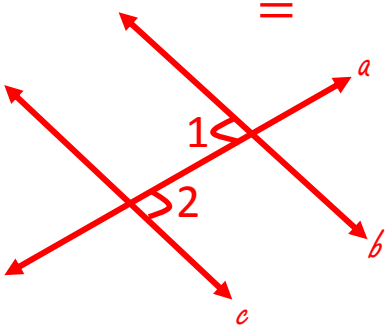
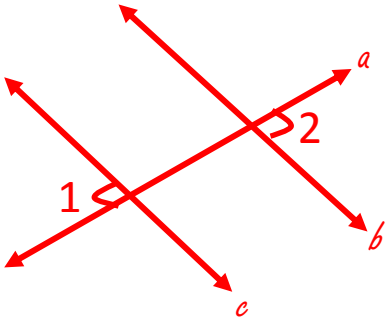
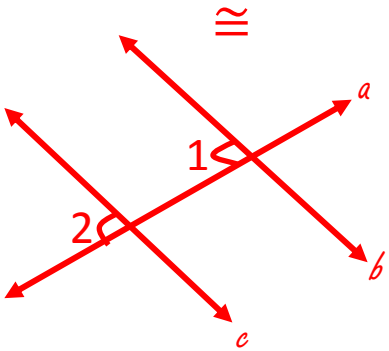
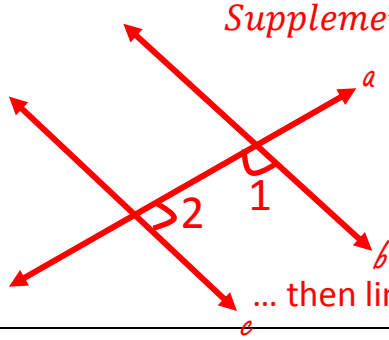
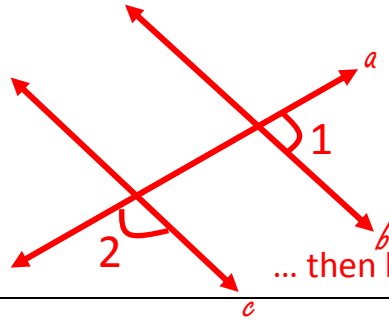
Intro to Geometry (G.CO.9) Name: _____

Unit One B: Proving Lines are Parallel Graphic Organizer (IC24)

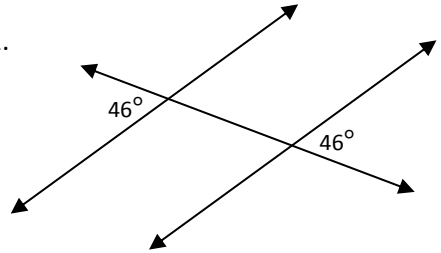
If two lines are cut by a transversal and…

Alternate interior angles are ≅  … then lines b and c are parallel	Alternate exterior angles are ≅  … then lines b and c are parallel	Corresponding angles are ≅  … then lines b and c are parallel
Same-side interior angles are *Supplementary*  … then lines b and c are parallel	Same-side exterior angles are *Supplementary*  … then lines b and c are parallel	

…then the lines are parallel!

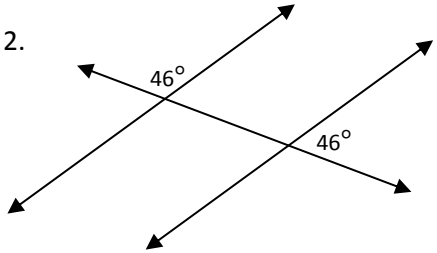
Are the following lines parallel?

1.



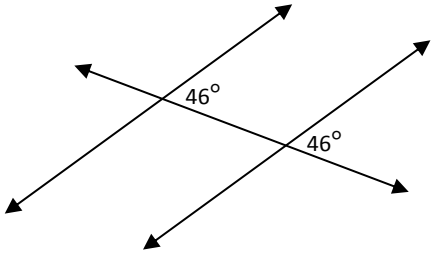
Yes, alt ext $\angle$'s $\cong$ so lines ||

2.



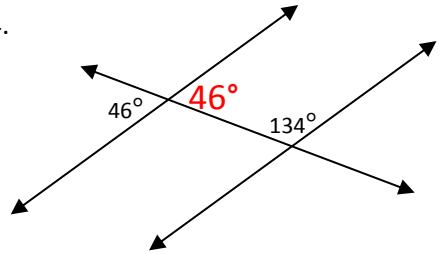
No, s-s ext $\angle$'s would be supp. If lines ||

3.



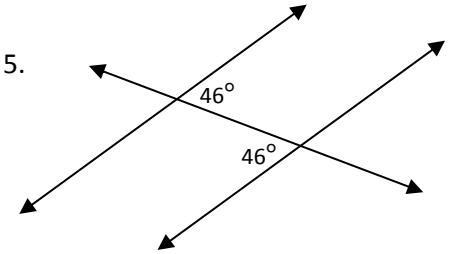
Yes, corr $\angle$'s $\cong$ so lines ||

4.



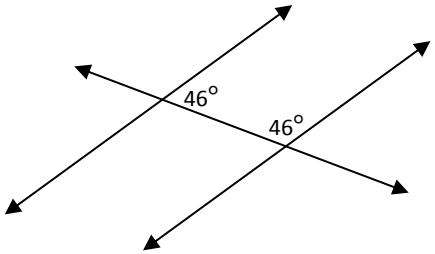
Yes, s-s int $\angle$'s supp, so lines ||

5.



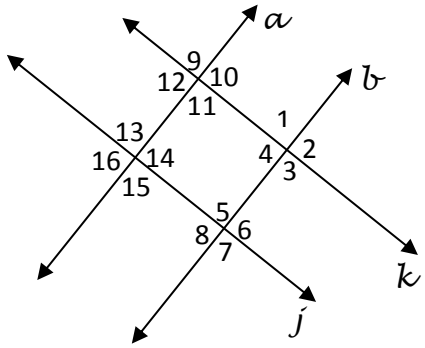
Yes, alt int $\angle$'s $\cong$ so lines ||

6.



No, s-s int $\angle$'s would be supp. If lines ||

Which lines, if any, in the diagram below are parallel if each of the following is provided as your given information?



1. $\angle 1 \cong \angle 7$

Transversal b, line j || line k

2. $\angle 4 \cong \angle 6$

Transversal b, line j || line k

3. $\angle 11 \cong \angle 3$

Transversal k, line a || line b

4. $\angle 9 \cong \angle 2$

Transversal k, NOT parallel

5. $\angle 1 \cong \angle 13$

NO Transversal , NOT parallel

6. $\angle 16$ *supp* $\angle 7$

Transversal j, line a || line b

7. $\angle 9$ *supp* $\angle 3$

Transversal k, NOT parallel

8. $\angle 12 \cong \angle 16$

Transversal a, line j || line k

9. $\angle 14 \cong \angle 5$

Transversal j, NOT parallel

10. $\angle 13 \cong \angle 8$

Transversal j, NOT parallel

11. $\angle 15$ *supp* $\angle 10$

Transversal a, line j || line k

12. $\angle 16 \cong \angle 10$

Transversal a, line j || line k