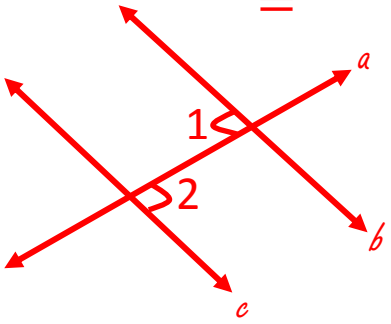
Geometry (G.CO.9)

Name: _____

Unit One B: Proving Lines are Parallel Graphic Organizer (IC28)

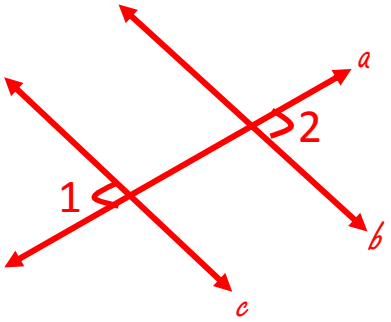
If two lines are cut by a transversal and…

Alternate interior angles are ≅



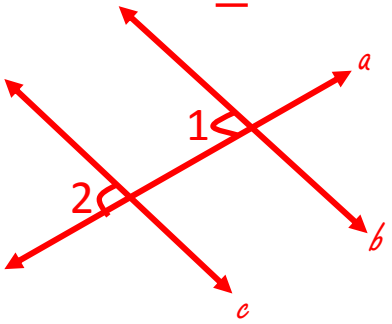
… then lines b and c are parallel

Alternate exterior angles are ≅



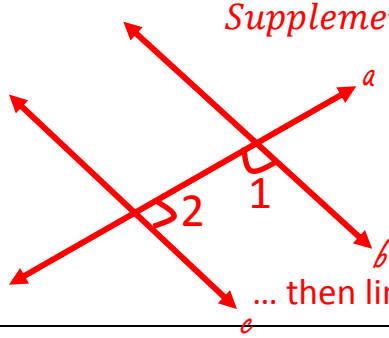
… then lines b and c are parallel

Corresponding angles are ≅



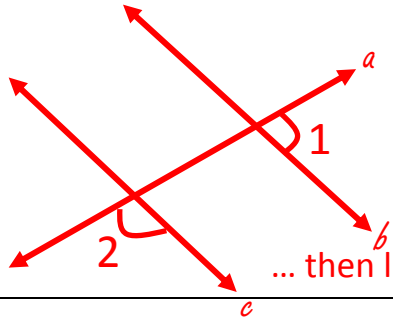
… then lines b and c are parallel

Same-side interior angles are *Supplementary*



… then lines b and c are parallel

Same-side exterior angles are *Supplementary*

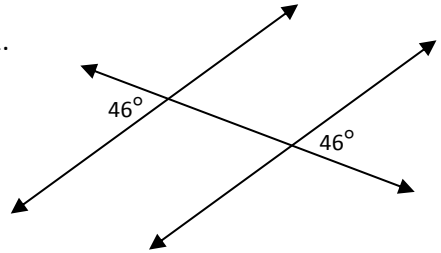


… then lines b and c are parallel

…then the lines are parallel!

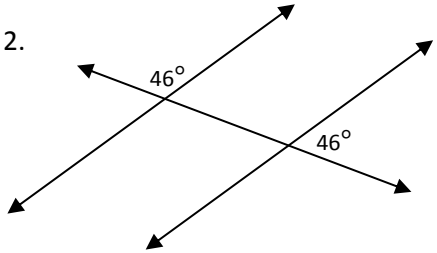
Are the following lines parallel?

1.



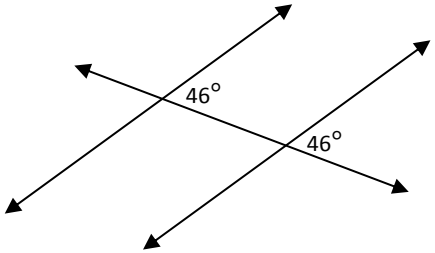
Yes, alt ext $\angle's \cong$ so lines ∥

2.



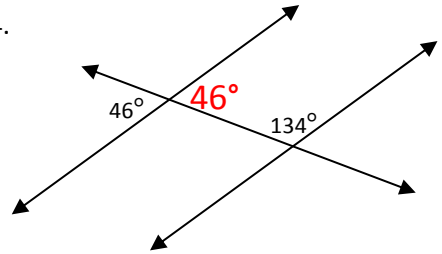
No, s-s ext $\angle's$ would be supp. If lines ∥

3.



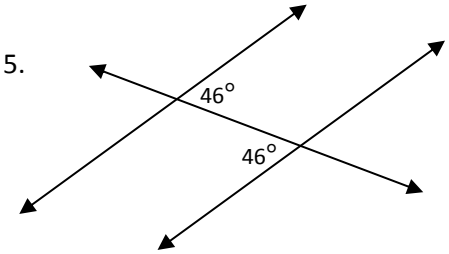
Yes, corr $\angle's \cong$ so lines ∥

4.



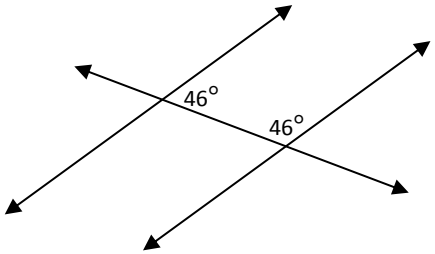
Yes, s-s int $\angle's$ supp, so lines ∥

5.



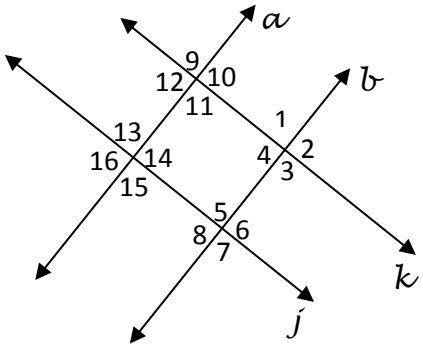
Yes, alt int $\angle's \cong$ so lines ∥

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