3.3

PROVING LINES PARALLEL

- **Use the converses of the Corresponding Angles Postulate, Alternate Interior Angles Theorem, Alternate Exterior Angles Theorem, and the Same Side Interior Angles Theorem to show that lines are parallel.**

Exploring...

Converse Corresponding Angles Postulate (Converse CA)

If two lines are cut by a transversal and the corresponding angles are _____, then the lines are _____

Converse Alternate Interior Angles Theorem (Converse AIA)

If two lines are cut by a transversal and the alternate interior angles are _____, then the lines are _____

Converse Alternate Interior Angles Theorem (Converse AEA)

POK

If two lines are cut by a transversal and the alternate exterior angles are _____, then the lines are _____

Converse Same Side Interior Angles Theorem (Converse SSI)

POK

If two lines are cut by a transversal and the same side interior angles are _____, then the lines are _____

Fundamental Differences Between the Original and the Converse

These determine congruent angles

- **CA Postulate**
- **AIA Theorem**
- **AEA Theorem**
- **SSI Theorem**

These determine parallel lines

- **Converse CA Postulate**
- **Converse AIA Theorem**
- **Converse AEA Theorem**
- **Converse SSI Theorem**

CONSTRUCTIONS

1. Duplicating a segment

2. Adding and Subtracting segments

3. Equilateral Triangle

4. 60° Angle

5. Isosceles Triangle

CONSTRUCTIONS

6. **Duplicating an angle**

7. **Adding angles**

8. **Duplicate Triangle**

9. **Parallel Lines**