

**Recap from yesterday:** Complete the statements below.

If corresponding angles are congruent, then \_\_\_\_\_.

If alternate interior angles are congruent, then \_\_\_\_\_.

If consecutive interior angles are congruent, then \_\_\_\_\_.

If alternate exterior angles are congruent, then \_\_\_\_\_.

View [Concept in Motion](#) - Construction of a Parallel Line Through a Point Not on the Line.

The construction establishes \_\_\_\_\_

\_\_\_\_\_

In 1795, John Playfair provided the modern version of Euclid's **Parallel Postulate**:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Online Applet Activity:**

Go to [www.mathopenref.com](http://www.mathopenref.com) and explore these applets (by dragging and manipulating them around the screen) to complete the statements below and answer the questions.

**Under "Plane Geometry," select *Angles* and choose *Linear Pair*. After your exploration with the applet, what can you conclude?**

- 1) If two adjacent angles have a non-common legs that form a straight angle,

then \_\_\_\_\_

**For example:**

- 2) If  $\angle JQM$  and  $\angle LKM$  form a linear pair, then \_\_\_\_\_

**Scroll all the way to the bottom of the page and select *Vertical Angles*. After your exploration with the applet, what can you conclude?**

- 3) If two non adjacent angles are formed by the intersection of two straight lines,

then \_\_\_\_\_

**For example:**

- 4) If  $\angle JQM$  and  $\angle LQK$  are vertical angles, then \_\_\_\_\_
- 5) If  $\angle JQL$  and  $\angle MQK$  are vertical angles, then \_\_\_\_\_

**Scroll all the way to the bottom of the page and select *Corresponding Angles*. After your exploration with the applet, what can you conclude?**

- 6) If  $\overline{PQ} \parallel \overline{RS}$  and are cut by the transversal  $\overline{AB}$ , then \_\_\_\_\_

**What is the converse of that statement?**

- 7) If  $\angle AEQ \cong \angle EFS$ , then \_\_\_\_\_

**Scroll all the way to the bottom of the page and select *Alternate Interior Angles*. After your exploration with the applet, what can you conclude?**

- 8) If  $\overline{PQ} \parallel \overline{RS}$  and are cut by the transversal  $\overline{AB}$ , then \_\_\_\_\_

**What is the converse of that statement?**

- 9) If  $\angle PEF \cong \angle EFS$ , then \_\_\_\_\_

**Scroll all the way to the bottom of the page and select *Alternate Exterior Angles*. After your exploration with the applet, what can you conclude?**

- 10) If  $\overline{PQ} \parallel \overline{RS}$  and are cut by the transversal  $\overline{AB}$ , then \_\_\_\_\_

**What is the converse of that statement?**

- 11) If  $\angle PEA \cong \angle BFS$ , then \_\_\_\_\_

**Scroll all the way to the bottom of the page and select *Interior Angles of a Transversal*. After your exploration with the applet, what can you conclude?**

- 12) If  $\overline{PQ} \parallel \overline{RS}$  and are cut by the transversal  $\overline{AB}$ , then \_\_\_\_\_

**What is the converse of that statement?**

- 13) If  $m\angle PEF + m\angle EFR = 180$ , then \_\_\_\_\_

14) Based on your overall observations, complete the following statement:

- If  $\overline{PQ} \perp \overline{AB}$  and  $\overline{PQ} \parallel \overline{RS}$ , then \_\_\_\_\_