

Angle Pair Relationships

Ms. Laster

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Angle Pair Relationships

- Vertical Angles and Linear Pairs
 - A couple of sections ago, you learned that two angles are *adjacent* if they share a common vertex and side but have no common interior points.
 - In this lesson, you will study other relationships between pairs of angles.

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Angle Pair Relationships

- Two angles are vertical angles if their sides form two pairs of opposite rays.

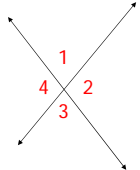
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Angle Pair Relationships

- Two angles are vertical angles if their sides form two pairs of opposite rays.



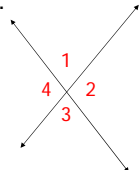
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Angle Pair Relationships

- Two angles are vertical angles if their sides form two pairs of opposite rays.
 - $\angle 1$ and $\angle 3$ are vertical angles.



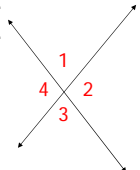
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Angle Pair Relationships

- Two angles are vertical angles if their sides form two pairs of opposite rays.
 - $\angle 1$ and $\angle 3$ are vertical angles.
 - $\angle 2$ and $\angle 4$ are vertical angles.



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Angle Pair Relationships

- Two adjacent angles are a linear pair if their noncommon sides are opposite rays.

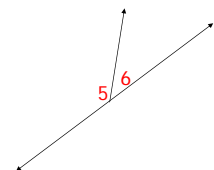
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Angle Pair Relationships

- Two adjacent angles are a linear pair if their noncommon sides are opposite rays.



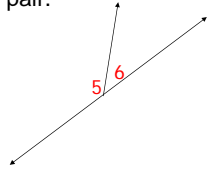
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Angle Pair Relationships

- Two adjacent angles are a linear pair if their noncommon sides are opposite rays.
 - $\angle 5$ and $\angle 6$ are a linear pair.



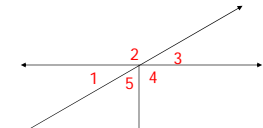
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Identifying Vertical Angles and Linear Pairs

- Are $\angle 1$ and $\angle 2$ a linear pair?



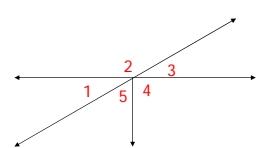
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Identifying Vertical Angles and Linear Pairs

- Are $\angle 1$ and $\angle 2$ a linear pair?
 - yes



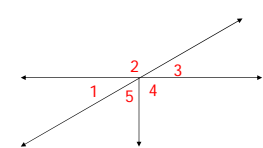
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Identifying Vertical Angles and Linear Pairs

- Are $\angle 4$ and $\angle 5$ a linear pair?



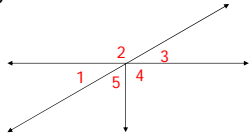
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Identifying Vertical Angles and Linear Pairs

- Are $\angle 4$ and $\angle 5$ a linear pair?
 - No, their non-common sides are not opposite rays.

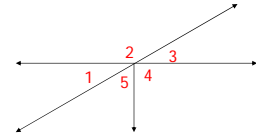


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Identifying Vertical Angles and Linear Pairs

- Are $\angle 5$ and $\angle 3$ vertical angles?

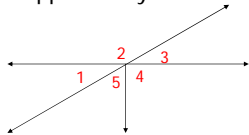


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Identifying Vertical Angles and Linear Pairs

- Are $\angle 5$ and $\angle 3$ vertical angles?
 - No, the sides of the angles don't form two pairs of opposite rays.

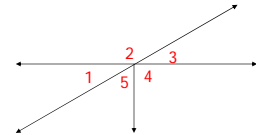


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Identifying Vertical Angles and Linear Pairs

- Are $\angle 1$ and $\angle 3$ vertical angles?

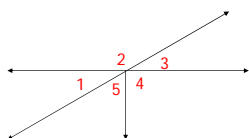


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Identifying Vertical Angles and Linear Pairs

- Are $\angle 1$ and $\angle 3$ vertical angles?
 - Yes



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Discovery

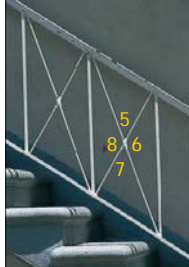
- In Activity 1.6 on page 43, you should have discovered two results:
 - Vertical angles are congruent.
 - The sum of the measures of angles that form a linear pair is 180° .
- We'll use these two results to find the measures of angles.

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Finding Angle Measures

- In the stair railing at right, $\angle 5$ has a measure of 36° . Find the measures of the other 3 angles.

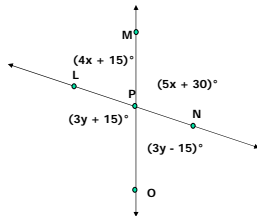


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Finding Angle Measures

- $x = 15$ and $y = 30$
- Find the 4 angle measures.

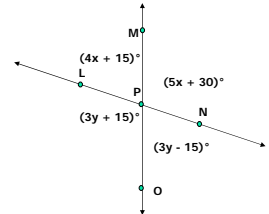


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Finding Angle Measures

- Solve for x and y .



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