Ch 2- Basic Concepts and Proofs

Agenda:

2.8- Vertical Angles

Objective:

- Recognize Opposite Rays
- Recognize Vertical Angles

1)Do Now

2) Think...Pair...Share

3) Prove Theorem: Vertical angles are congruent

4) Practice Problems

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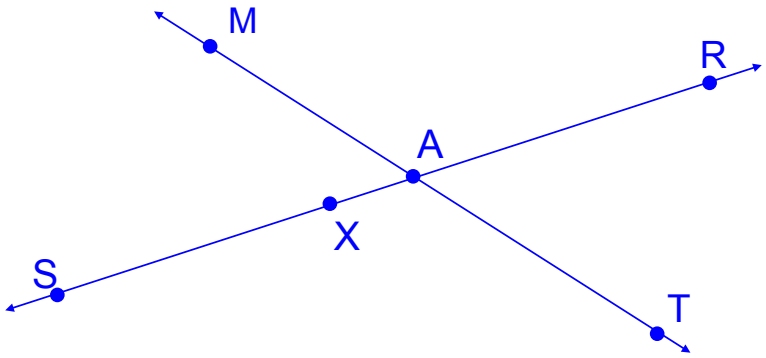
Do Now: Read the definition below. Answer the questions that follow.

Definition: Opposite Rays - Two **collinear** rays that have a **common endpoint** and extend in **different directions**.



Name all Opposite Rays:

Give two examples of rays that look opposite, but are actually **not opposite** rays.

Think...Pair...Share...

Vertical Angles Definition: Two angles are vertical angles **if** the rays forming the sides of one **and** the rays forming the sides of the other are opposite rays.

THINK:

1) Write this statement as a conditional statement and then write its converse.

conditional: _____

_____

converse: _____

_____

2)Draw a picture of Vertical Angles.

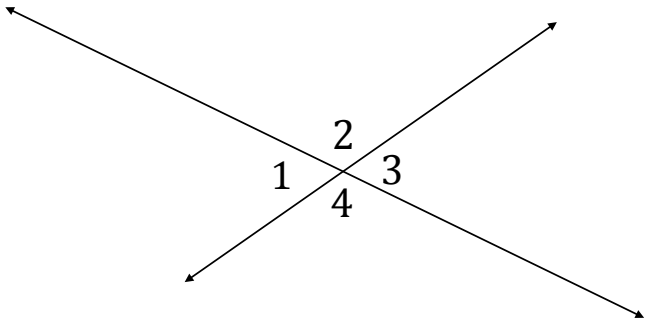
PAIR:

3) Try to come up with a chain of reasoning (If____ then____, IF____, then_____, etc...) that will explain how we know that **vertical angles** are **congruent**. We will work together to PROVE this later in class.

Prove it!

Given: Diagram as shown

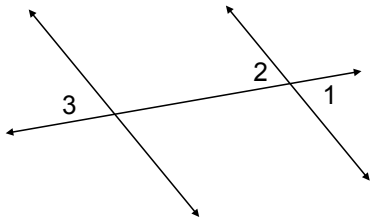
Prove: $\angle 1 \cong \angle 3$



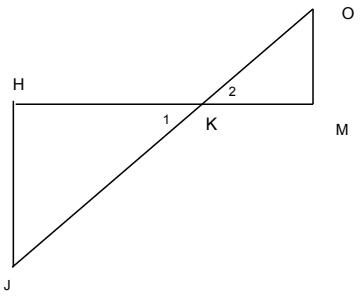
Statement	Reason
0. $\measuredangle 1$ *and* $\measuredangle 3$ *are vertical angles*	0. Diagram/ definition of vertical angles
1.	1.
2.	2.
3.	3.

Practice Problems

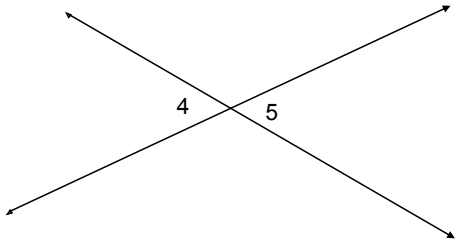
1) Given: $\angle 2 \cong \angle 3$
Prove: $\angle 1 \cong \angle 3$



2) Given: $\angle O$ is comp. to $\angle 2$
$\angle J$ is comp. to $\angle 1$
Prove: $\angle O \cong \angle J$



3) Given: $m\angle 4 = 2x + 5$
$m\angle 5 = x + 30$
Find: $m\angle 4$



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