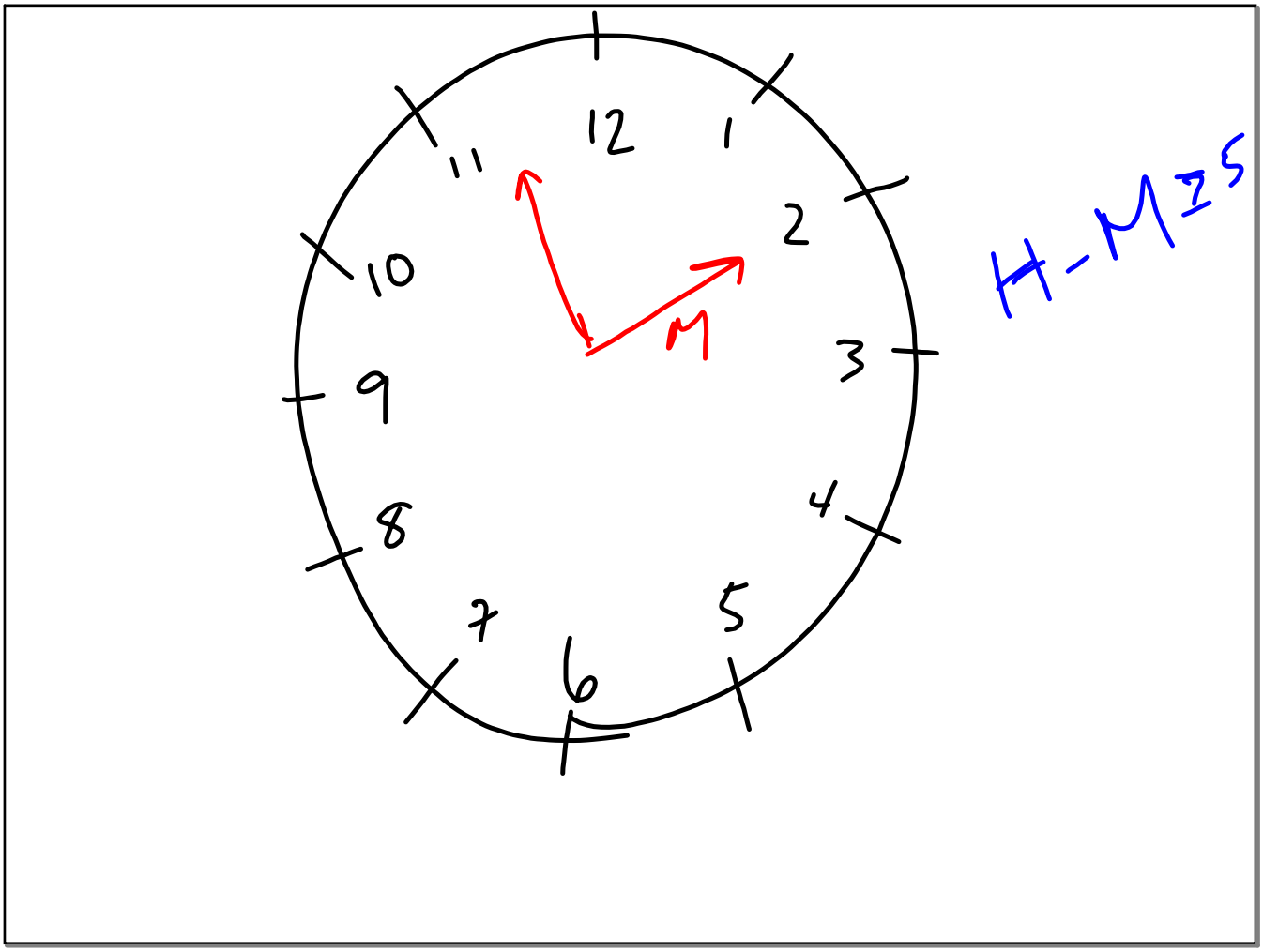

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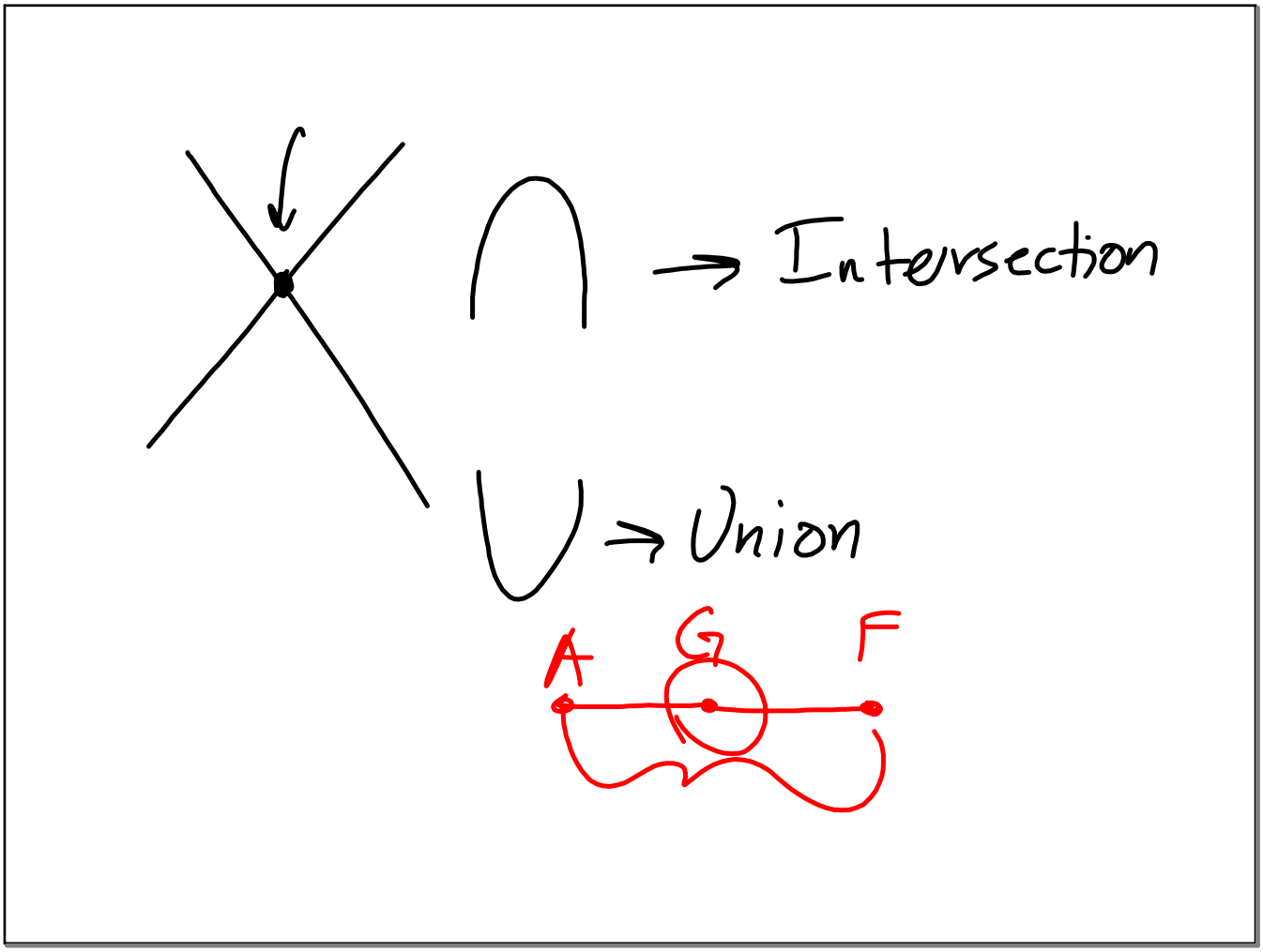

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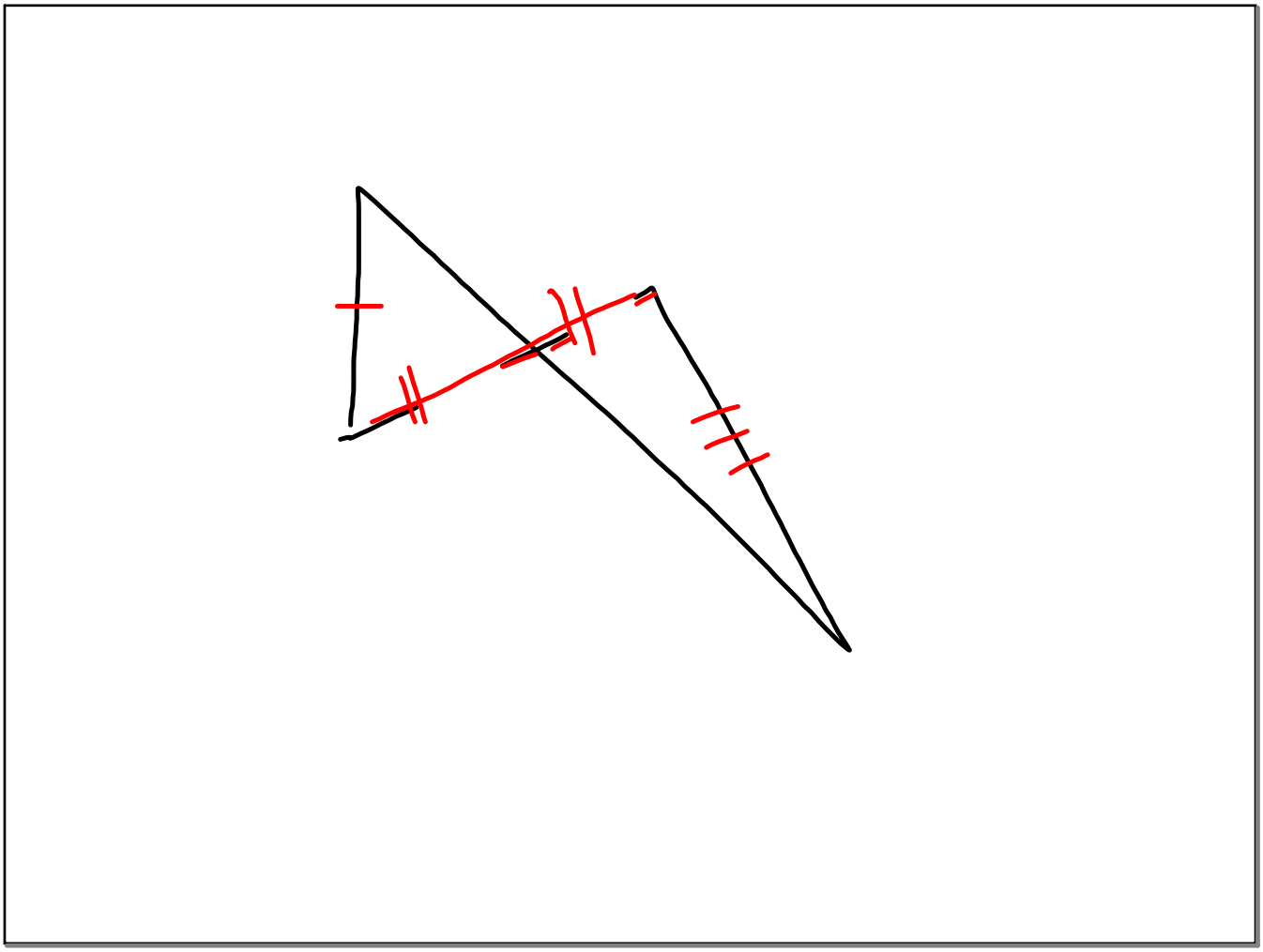

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Proofs

Much of the *enjoyment and challenge* of geometry is found in "proving things!"

Two column proofs are the most common type of proof that we will use this year.

All two column proofs have the following elements:

- "Given" statements
- "Prove" statement
- A diagram
- Two column: Statements and Reasons
- Every statement and reason is numbered

Aug 17-4:41 PM

Definitions

- need to be stated in **If - then Form**
- are *reversible*

Example: Rt ∠ = 90°

If an ∠ is a 90° ∠, then it is a rt ∠.

If an ∠ is a rt ∠, then it is a 90° ∠.

Index Card!!

Aug 17-4:47 PM

Statements

- Always write a given for the 1st statement
- Statements need to be in a logical order
- Statements are specific
- The LAST statement is the "Prove"

Index Card!!

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Reasons

- "Given" is always the 1st Reason
- Definitions written in "if-then" form (they are reversible!)
- Theorems (written out)
- "Addition"/ "Subtraction"
- "Assumed from diagram"
- "Same as _____"

Example Reasons

Index Card!!

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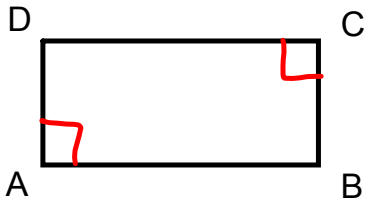
Sample Problems

See page 25 in your textbook for Sample Problems #1 - 3

1. Given: $\angle A$ *is a rt* $\angle$
   $\angle C$ *is a rt* $\angle$

   Prove: $\angle A \cong \angle C$



Statements	Reasons
1. $\angle A$ *is a rt* $\angle$	1. Given
2. $\angle C$ *is a rt* $\angle$	2. Given
3. $\angle A \cong \angle C$	3. If two angles are right angles, then they are congruent.

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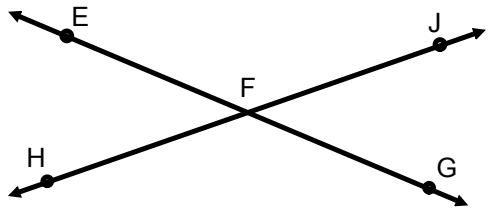
2. Given: *Diagram as shown*
   Conclusion: $\angle EFG \cong \angle HFJ$



Statements	Reasons
1. Diagram as shown	1. Given
2. $\angle EFG$ is a straight angle.	2. Assumed from diagram
3. $\angle HFJ$ is a straight angle.	3. Assumed from diagram
4. $\angle EFG \cong \angle HFJ$	4. If two angles are straight angles, then they are congruent.

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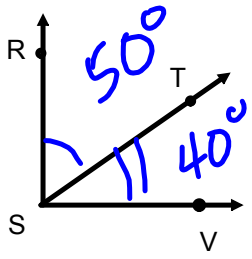
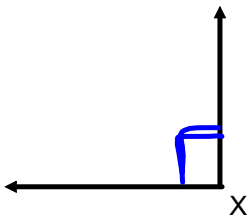
3. Given: $\angle RST = 50°$
$\angle TSV = 40°$
$\angle X$ *is a rt* $\angle$

Prove: $\angle RSV \cong \angle X$





Statements	Reasons
1. $\angle RST = 50°$	1. Given
2. $\angle TSV = 40°$	2. Given
3. $\angle X$ is a rt $\angle$	3. Given
4. $\angle RSV = 90°$	4. Addition (50 + 40 = 90)
5. $\angle RSV$ *is a rt* $\angle$	5. If an angle is 90 deg, then it is a rt angle
6. $\angle RSV \cong \angle X$	6. If two angles are rt angles, then they are congruent.

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Switch to the Midpoints and Bisectors Power Point!

Aug 20-12:58 PM

Exit Slip

1. List 3 "reasons" for proofs
2. What does bisect mean?
3. If two points are trisection points, what can you conclude?

Aug 21-11:24 AM