
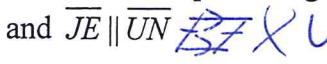
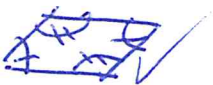



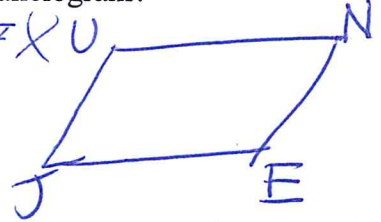
Name Schlansky
Mr. Schlansky

Date _____
Geometry

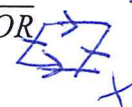
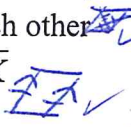
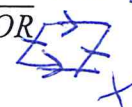

Parallelogram Proofs Practice

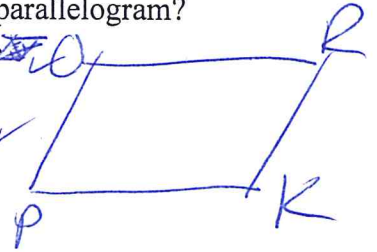
1. Which of the following will prove that quadrilateral JUNE is a parallelogram?

- 1) $\overline{JN} \cong \overline{UE}$ ~~✗~~  ~~✗~~ 3) $\overline{JU} \cong \overline{NE}$ and $\overline{JE} \parallel \overline{UN}$ ~~✗~~  ~~✗~~
 2) $\angle J \cong \angle N$ and $\angle U \cong \angle E$  ~~✗~~ 4) $\overline{JU} \cong \overline{UN}$  ~~✗~~



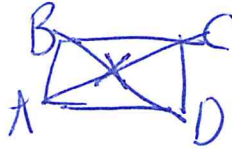
2. Which of the following will not prove that quadrilateral PORK is a parallelogram?

- 1) $\overline{PO} \cong \overline{RK}$ and $\overline{PK} \cong \overline{OR}$ ~~✗~~  ~~✗~~ 3) \overline{PR} and \overline{OK} bisect each other ~~✗~~  ~~✗~~
 2) $\overline{PO} \cong \overline{RK}$ and $\overline{PK} \parallel \overline{OR}$  ~~✗~~ 4) $\overline{PO} \cong \overline{RK}$ and $\overline{PO} \parallel \overline{RK}$  ~~✗~~

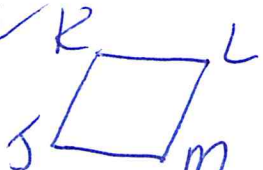
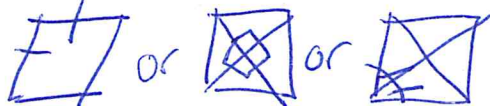
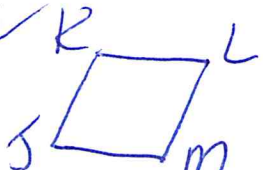
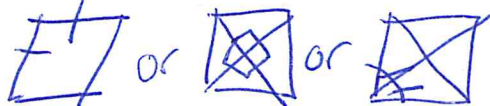


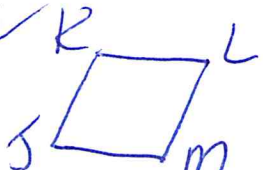
3. Which of the following will prove parallelogram ABCD is a rectangle?

- 1) $\overline{AB} \cong \overline{BC}$ ~~✗~~ 3) $\overline{AC} \cong \overline{BD}$  ~~✗~~
 2) $\overline{AC} \perp \overline{BD}$ ~~✗~~ 4) $\overline{AB} \cong \overline{CD}$ and $\overline{AD} \cong \overline{BC}$ ~~✗~~



4. Which of the following will not prove parallelogram JKLM is a rhombus?

- 1) $\overline{KL} \cong \overline{LM}$  ~~✗~~ 3) $\overline{JL} \cong \overline{KM}$ ~~✗~~  ~~✗~~
 2) $\overline{JL} \perp \overline{KM}$  ~~✗~~ 4) $\angle JKM \cong \angle CKM$  ~~✗~~



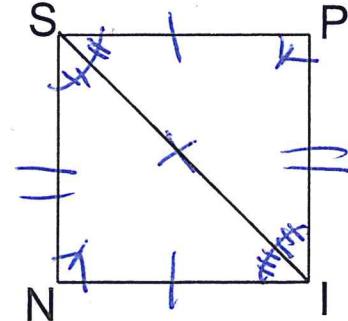
5. Which of the following will prove rectangle MATH is a square?

- 1) $\overline{MT} \cong \overline{AH}$ ~~✗~~ 3) $\overline{KL} \perp \overline{LM}$ ~~✗~~  ~~✗~~
 2) $\overline{TH} \cong \overline{HM}$  ~~✗~~ 4) $\angle A$ is a right angle ~~✗~~



6. Given: SPIN is a square
 Prove: $\triangle SNI \cong \triangle SPI$

* We only need 3 but I can find all 6.



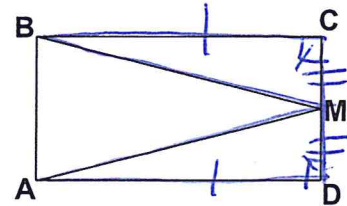
Statements

Reasons

- ① SPIN is a square
- ② $\overline{SP} \cong \overline{NI}$, $\overline{SN} \cong \overline{PI}$
- ③ $\overline{SI} \cong \overline{SI}$
- ④ $\angle SNI \cong \angle SPI$
- ⑤ $\angle PSN \cong \angle NPI$, $\angle NIS \cong \angle PIS$
- ⑥ $\triangle SNI \cong \triangle SPI$

- ① given
 - ② A square has opposite sides congruent
 - ③ Reflexive Property
 - ④ A square has congruent right angles.
 - ⑤ A square has diagonals that bisect its angles.
 - ⑥ SSS, SAS, ASA, AAS, HL
- * Since I proved all 6, I proved all of these

7. Given: ABCD is a rectangle, M is the midpoint of \overline{CD}
 Prove: $\overline{BM} \cong \overline{AM}$



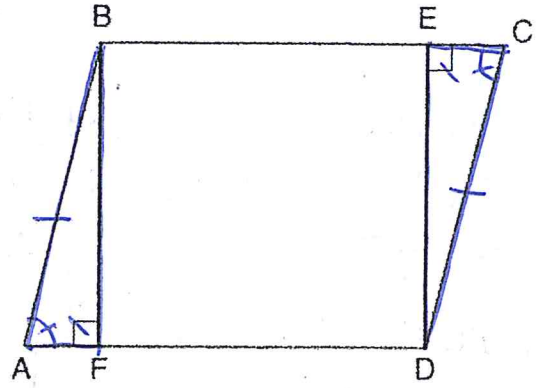
Statements

Reasons

- ① ABCD is a rectangle
- ② $\angle BCM \cong \angle ADM$
- ③ $\overline{BC} \cong \overline{AD}$
- ④ M is the midpoint of \overline{CD}
- ⑤ $\overline{CM} \cong \overline{MD}$
- ⑥ $\triangle BCM \cong \triangle ADM$
- ⑦ $\overline{BM} \cong \overline{AM}$

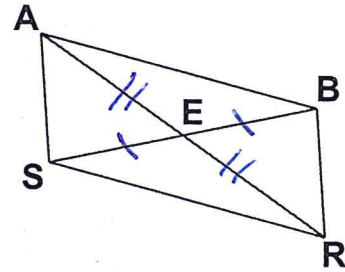
- ① given
- ② A rectangle has congruent right angles
- ③ A rectangle has opposite sides congruent
- ④ given
- ⑤ A midpoint creates two congruent segments
- ⑥ SAS
- ⑦ CPCTC

8. Given: Parallelogram $ABCD$, $\overline{BF} \perp \overline{AFD}$, and $\overline{DE} \perp \overline{BEC}$
 Prove: $\overline{AF} \cong \overline{EC}$





Statements	Reasons
① Parallelogram ABCD	① given
② $\overline{AB} \cong \overline{CD}$	② A parallelogram has opposite sides congruent.
③ $\angle BAF \cong \angle DCE$	③ A parallelogram has opposite angles congruent.
④ $\overline{BF} \perp \overline{AFD}$, $\overline{DE} \perp \overline{BEC}$	④ given
⑤ $\angle BFA \cong \angle DCE$	⑤ Perpendicular lines form congruent right angles.
⑥ $\triangle BFA \cong \triangle DCE$	⑥ AAS
⑦ $\overline{AF} \cong \overline{EC}$	⑦ CPCTC

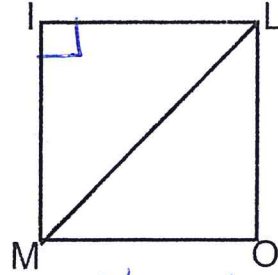
9. Given: E is the midpoint of \overline{SB} , \overline{SB} bisects \overline{AR}
 Prove: SABR is a parallelogram






Statements	Reasons
① E is the midpoint of \overline{SB}	① given
② $\overline{SE} \cong \overline{EB}$	② A midpoint creates two congruent segments.
③ \overline{SB} bisects \overline{AR}	③ given
④ $\overline{AE} \cong \overline{ER}$	④ A line bisector creates two congruent segments.
⑤ SABR is a parallelogram	⑤ A parallelogram has diagonals that bisect each other.

To prove a rhombus is a square,
 prove  or 

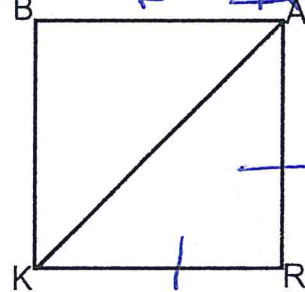
10. Given: MILO is a rhombus, $\overline{MI} \perp \overline{IL}$
 Prove: MILO is a square



Statements	Reasons
① MILO is a rhombus	① given
② $\overline{MI} \perp \overline{IL}$	② given
③ $\angle MIL$ is a right angle	③ Perpendicular lines create right angles
④ MILO is a square	④ A square is a rhombus with a right angle.

A square is a rectangle with
 or  or 

11. Given: BARK is a rectangle and $\triangle ARK$ is isosceles.
 Prove: BARK is a square



Statements	Reasons
① BARK is a rectangle.	① given
② $\triangle ARK$ is isosceles	② given
③ $\overline{AR} \cong \overline{RK}$	③ Isosceles Triangle Theorem
④ BARK is a square	④ A square is a rectangle with consecutive sides congruent.