

SWBAT: Use properties of rhombus and squares in proofs
Lesson 7B-3

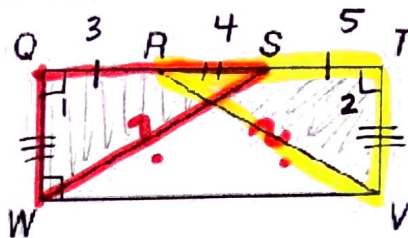
LESSON PRACTICE

② Given: $QTVW$ is a rectangle.

$$\overline{QR} \cong \overline{ST} \quad \overline{QS} \cong \overline{TR}$$

Prove: $\triangle SQW \cong \triangle RTV$

$$\overline{WS} \cong \overline{VR}$$



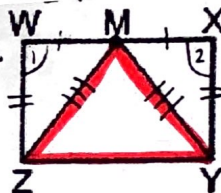
Statements

Reasons

- ① $QTVW$ is a rectangle
 $\overline{QS} \cong \overline{TR}$
- ② $\angle 1$ and $\angle 2$ are rt. \angle 's
- ③ $\angle 1 \cong \angle 2$
- ④ $\overline{QW} \cong \overline{TV}$
- ⑤ $\triangle SQW \cong \triangle RTV$
- ⑥ $\overline{WS} \cong \overline{VR}$
- ⑦

- ① Given
- ② If quad is a rectangle, all 4 angles are right angles
- ③ all right angles are \cong .
- ④ If quad is a rectangle, both pairs of opp. sides \cong .
- ⑤ SAS
- ⑥ CPCTC

2. Given: Rectangle $WXYZ$, M is the midpoint of \overline{WX} .
Prove: $\triangle ZMY$ is isosceles.



Statements

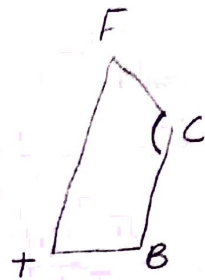
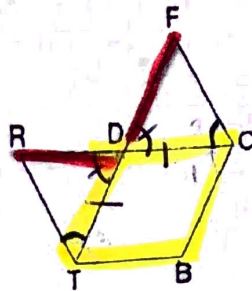
Reasons

- ① $WXYZ$ is a rectangle
 M is midpoint of \overline{WX}
- ② $\overline{WM} \cong \overline{MX}$
- ③ $\angle 1$ and $\angle 2$ are right \angle 's
- ④ $\angle 1 \cong \angle 2$
- ⑤ $\overline{WZ} \cong \overline{XY}$
- ⑥ $\triangle ZWM \cong \triangle YXM$
- ⑦ $\overline{ZM} \cong \overline{YM}$
- ⑧ $\triangle ZMY$ is isosceles

- ① Given
- ② a midpoint divides a seg into 2 \cong segs.
- ③ If a quad is a rectangle, all 4 \angle 's are rt. \angle 's
- ④ All right \angle 's are \cong
- ⑤ If a quad is a rectangle, both pairs of opp. sides \cong .
- ⑥ SAS
- ⑦ CPCTC
- ⑧ If 2 sides of a \triangle are \cong , the triangle is isosceles.

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3. Given: $TBCD$ is a rhombus
 ~~$\angle RTB \cong \angle FCB$~~
 $\angle RTD \cong \angle FCD$
 Prove: $\overline{RD} \cong \overline{DF}$



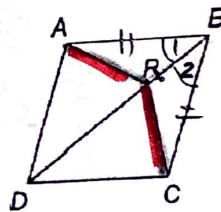
Statements

Reasons

- ① $TBCD$ is a rhombus
 $\angle RTD \cong \angle FCD$
- ② $\overline{DT} \cong \overline{CD}$
- ③ $\angle RDT \cong \angle FDC$
- ④ $\triangle RDT \cong \triangle FDC$
- ⑤ $\overline{RD} \cong \overline{DF}$

- ① given
- ② If quad is a rhombus, all sides are \cong .
- ③ All vertical \angle 's are \cong .
- ④ ASA
- ⑤ CPCTC

4. Write a two-column proof to prove that if $ABCD$ is a rhombus with diagonal \overline{DB} , then $\overline{AP} \cong \overline{CP}$.



Statements

Reasons

- ① $ABCD$ is a rhombus with diagonal \overline{DB}
- ② $\angle 1 \cong \angle 2$
- ③ $\overline{BP} \cong \overline{BP}$
- ④ $\overline{AB} \cong \overline{CB}$
- ⑤ $\triangle ABR \cong \triangle CBR$
- ⑥ $\overline{AP} \cong \overline{CP}$ - Prove

- ① given
- ② If quad is a rhombus, diagonals bisect opp. \angle 's.
- ③ Reflexive property
- ④ If quad is a rhombus, then all sides \cong .
- ⑤ SAS
- ⑥ CPCTC