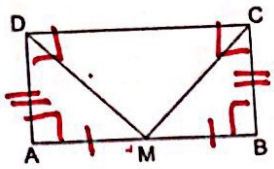
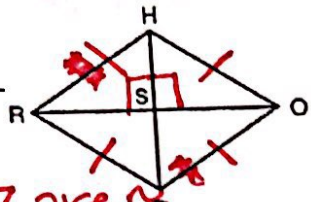
GUIDED NOTES: Proofs with Quadrilaterals

EX1. Given □ABCD is a Rectangle.
M is the Midpoint of AB
Prove DM ≅ CM



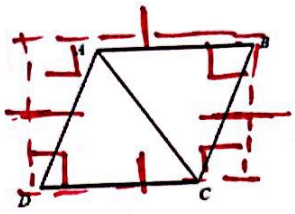
Statement	Reason
1. ABCD is a rectangle	1. Given
2. M is the midpoint of $\overline{AB}$	2. Given
3. <A and <B are Right Angles	3. all rectangles have 4 right angles (defn of rectangle)
4 AM ≅ MB	4. defn of midpoint
5. AD ≅ BC	5. opposite sides of ▱ are ≅
6. △DAM ≅ △CBM	6. SAS
7. DM ≅ CM	7. CPCTC

EX2. Given □BRHO is a Parallelogram.
BR ≅ BO
Prove <HSR ≅ <HSO



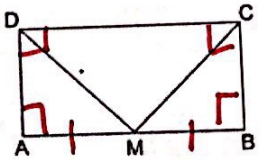
Statement	Reason
1. BRHO is a ▱	1. Given
2. $\overline{BR} \cong \overline{BO}$	2. Given
3. OB ≅ HR	3. opposite sides of ▱ are ≅
4 RB ≅ HO	4. opposite sides of ▱ are ≅
5. BRHO is a rhombus	5. All sides are congruent.
6. <HSR ≅ <HSO	6. diagonals are ⊥ (90°)

EX3. Given □ABCD is a Parallelogram.
<ADC is a Right Angle
AD ≅ DC
Prove □ABCD is a Square



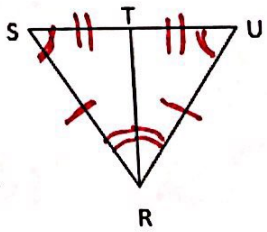
Statement	Reason
1. ABCD is ▱	1. Given
2. ∠ADC is a right angle	2. Given
3. AD ≅ DC	3. Given
4. <ABC ≅ <ADC ≅ <DAB ≅ <BCD	4. If 1 angle is 90°, all are 90°
5. AD ≅ BC	5. opposite sides of ▱ are ≅
6. AB ≅ DC	6. opposite sides of ▱ are ≅
7. □ABCD is a Square	7. defn of square

EX4. Given □ABCD is a Rectangle
AM ≅ MB
Prove ΔDMC is an Isosceles Triangle



Statement	Reason
1. ▱ABCD is a rect.	1. Given
2. AM ≅ MB	2. Given
3. AD ≅ CB	3. opposite sides of ▱ are ≅
4. ∠A ≅ ∠B ≅ ∠C ≅ ∠D	4. Rectangles have 4 right angles
5. ΔDAM ≅ ΔCBM	5. SAS
6. DM ≅ MC	6. CPCTC
7. ΔDMC is an isosceles Δ	7. An Isosceles have 2 congruent sides.

EX 5. Given: $RS \cong RU$, $TS \cong TU$,
$< S \cong < U$, $< SRT \cong < URT$
Prove: $\Delta RST \cong \Delta RUT$



Statement	Reason
1) RS ≅ RU, TS ≅ TU, ∠S ≅ ∠U, ∠SRT ≅ ∠URT	1) given
2) ΔRST ≅ ΔRUT	2) ASA, SAS