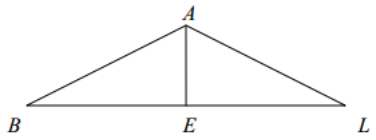
Name _____ Date _____

Geometry – Pd ___ ***Practice Proofs*** Extra Practice

1) Given: ΔBAL is isosceles with base BL
E bisects BL

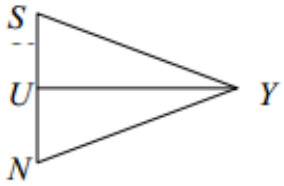
Prove: $\Delta BAE \cong \Delta LAE$



Statements	Reasons

2) Given: $< USY \cong < UNY$
UY bisects $< SYN$

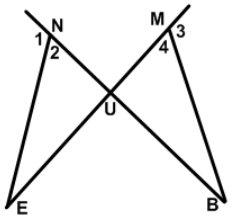
Prove: $< SUY \cong < NUY$



Statements	Reasons

3) Given: $\overline{NU} \cong \overline{MU}$
$\angle 1 \cong \angle 3$

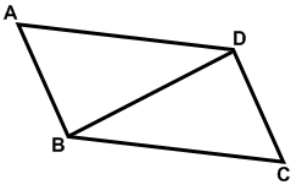
Prove: $\Delta NUE \cong \Delta MUB$



Statements	Reasons

4) Given: $\overline{AD} \parallel \overline{CB}$
$\overline{AD} \cong \overline{CB}$

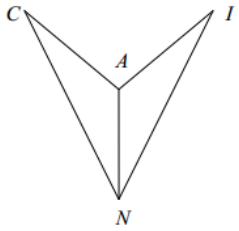
Prove: $\overline{AB} \cong \overline{CD}$



Statements	Reasons

5) Given: AN bisects $< CNI$
$\overline{CN} \cong \overline{IN}$

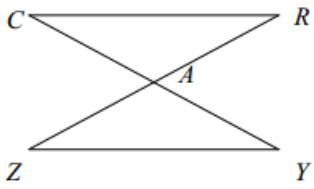
Prove: $< CAN \cong < IAN$



Statements	Reasons

6) Given: A is the midpoint of CY
$CR \,//\, YZ$

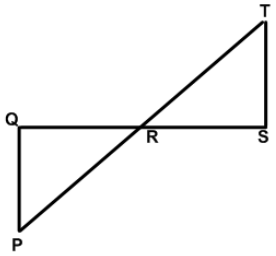
Prove: $\overline{CR} \cong \overline{YZ}$



Statements	Reasons

7) Given: $PQ \perp QS$
$TS \perp QS$
R is a median of QS

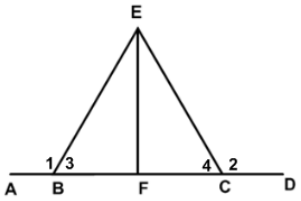
Prove: $\overline{QP} \cong \overline{ST}$



Statements	Reasons

8) Given: EF is an altitude
F is the midpoint of BC
$< 1 \cong < 2$

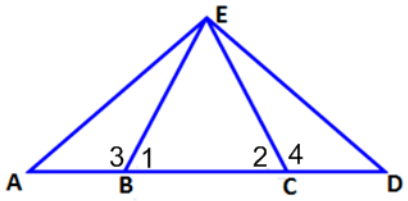
Prove: $\overline{BE} \cong \overline{CE}$



Statements	Reasons

9) Given: ΔAED is isosceles with base AD
$< 1 \cong < 2$

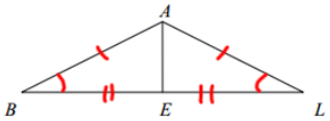
Prove: $< AEB \cong < DEC$



Statements	Reasons

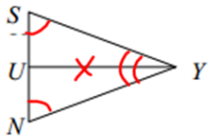
Practice Proofs Answer Key

1) Given: ΔBAL is isosceles with base BL
E bisects BL
Prove: $\Delta BAE \cong \Delta LAE$



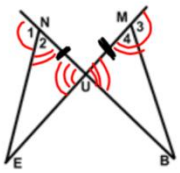
Statements	Reasons
1) ΔBAL is isosceles with base BL	1) Given
2) E bisects BL	2) Given
3) $< ABE \cong < ALE$	3) The base angles of an isosceles triangle are congruent
4) $BA \cong LA$	4) The legs of an isosceles triangle are congruent
5) $BE \cong LE$	5) A line bisector divides a segment into two congruent segments
6) $\Delta BAE \cong \Delta LAE$	6) SAS

2) Given: $< USY \cong < UNY$
UY bisects $< SYN$
Prove: $< SUY \cong < NUY$



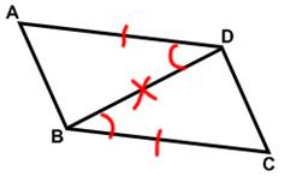
Statements	Reasons
1) $< USY \cong < UNY$	1) Given
2) UY bisects $< SYN$	2) Given
3) $< SYU \cong < NYU$	3) An angle bisector divides an angle into two congruent angles
4) $UY \cong UY$	4) Reflexive Property
5) $\Delta SUY \cong \Delta NUY$	5) AAS
6) $< SUY \cong < NUY$	6) CPCTC

3) Given: $\overline{NU} \cong \overline{MU}$
$< 1 \cong < 3$
Prove: $\Delta NUE \cong \Delta MUB$



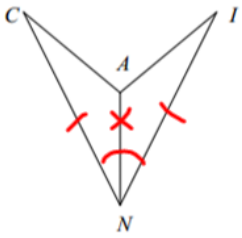
Statements	Reasons
1) $\overline{NU} \cong \overline{MU}$	1) Given
2) $< 1 \cong < 3$	2) Given
3) $< 2 \cong < 4$	3) Congruent angles have congruent supplements
4) $< NUE \cong < MUB$	4) Intersecting lines form congruent vertical angles
5) $\Delta NUE \cong \Delta MUB$	5) ASA

4) Given: $AD \parallel CB$
$\overline{AD} \cong \overline{CB}$
Prove: $\overline{AB} \cong CD$



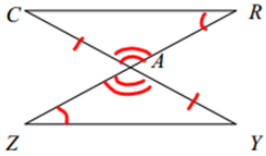
Statements	Reasons
1) $AD \parallel CB$	1) Given
2) $\overline{AD} \cong \overline{CB}$	2) Given
3) $< ADB \cong < CBD$	3) Parallel lines cut by a transversal form congruent alternate interior angles
4) $BD \cong BD$	4) Reflexive Property
5) $\Delta ADB \cong \Delta CBD$	5) SAS
6) $\overline{AB} \cong CD$	6) CPCTC

5) Given: AN bisects $< CNI$
$\overline{CN} \cong \overline{IN}$
Prove: $< CAN \cong < IAN$



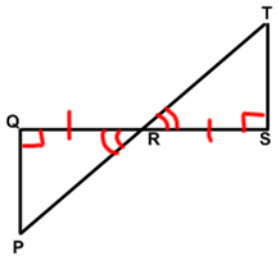
Statements	Reasons
1) AN bisects $< CNI$	1) Given
2) $\overline{CN} \cong \overline{IN}$	2) Given
3) $< CNA \cong < INA$	3) An angle bisector divides an angle into two congruent angles
4) $AN \cong AN$	4) Reflexive Property
5) $\Delta CAN \cong \Delta IAN$	5) SAS
6) $< CAN \cong < IAN$	6) CPCTC

6) Given: A is the midpoint of CY
$CR \parallel YZ$
Prove: $\overline{CR} \cong \overline{YZ}$



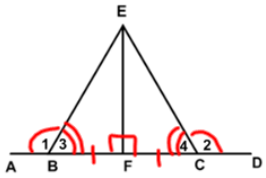
Statements	Reasons
1) A is the midpoint of CY	1) Given
2) $CR \parallel YZ$	2) Given
3) $CA \cong YA$	3) A midpoint divides a segment into two congruent segments
4) $< CRA \cong < YZA$	4) Parallel lines cut by a transversal form congruent alternate interior angles
5) $< CAR \cong < YAZ$	5) Intersecting lines form congruent vertical angles
6) $\Delta CAR \cong \Delta YAZ$	6) AAS
7) $\overline{CR} \cong \overline{YZ}$	7) CPCTC

7) Given: $PQ \perp QS$
$TS \perp QS$
R is a median of QS
Prove: $\overline{QP} \cong \overline{ST}$



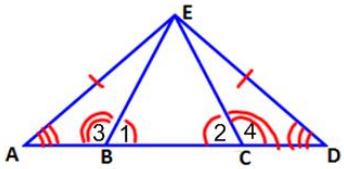
Statements	Reasons
1) $PQ \perp QS$	1) Given
2) $TS \perp QS$	2) Given
3) R is a median of QS	3) Given
4) $< PQR \cong < TSR$	4) Perpendicular lines form congruent right angles
5) $QR \cong SR$	5) A median divides a segment into two congruent segments
6) $< PRQ \cong < TRS$	6) Intersecting lines form congruent vertical angles
7) $\Delta PRQ \cong \Delta TRS$	7) ASA
8) $\overline{QP} \cong \overline{ST}$	8) CPCTC

8) Given: EF is an altitude
F is the midpoint of BC
$< 1 \cong < 2$
Prove: $\overline{BE} \cong \overline{CE}$



Statements	Reasons
1) EF is an altitude	1) Given
2) F is the midpoint of BC	2) Given
3) $< 1 \cong < 2$	3) Given
4) $< EFB \cong < EFC$	4) An altitude forms congruent right angles
5) $BF \cong CF$	5) A midpoint divides a segment into two congruent segments
6) $< 3 \cong < 4$	6) Congruent angles have congruent supplements
7) $\Delta EFB \cong \Delta EFC$	7) ASA
8) $\overline{BE} \cong \overline{CE}$	8) CPCTC

9) Given: ΔAED is isosceles with base AD
$< 1 \cong < 2$
Prove: $< AEB \cong < DEC$



Statements	Reasons
1) ΔAED is isosceles with base AD	1) Given
2) $< 1 \cong < 2$	2) Given
3) $< EAB \cong < EDC$	3) Base angles of an isosceles triangle are congruent
4) $AE \cong DE$	4) Legs of an isosceles triangle are congruent
5) $< 3 \cong < 4$	5) Congruent angles have congruent supplements
6) $\Delta AEB \cong \Delta DEC$	6) AAS
7) $< AEB \cong < DEC$	7) CPCTC