Name: _____

CC Geometry

Triangle Proofs Test Review

Questions 1 through 5 refer to the following:

What is the congruence correspondence, if any, that will prove the given triangles congruent?

1)

A) ASA   C) SSS
B) SAS   D) none

2)

A) HL   C) AAS
B) SAS   D) none

3)

A) ASA   C) SSS
B) SAS   D) none

4)

A) SAS   C) ASA
B) AAS   D) none

5)

A) SAS   C) SSA
B) AAS   D) none

6) The pair of triangles below have two corresponding parts marked as congruent.

What additional information is needed for an ASA congruence correspondence.

A) $\overline{PQ} \cong \overline{TS}$ C) $\overline{RP} \cong \overline{SU}$
B) $\overline{RQ} \cong \overline{TU}$ D) $\angle R \cong \angle U$

7) In the diagram below, $\triangle ABC \cong \triangle DEF$.

Complete the statement $\overline{AB} \cong \underline{\ ?\ }$.

A) $\overline{DE}$ C) $\overline{CB}$
B) $\overline{FE}$ D) $\overline{DF}$

8) In the accompanying diagram, $\overline{PR} \cong \overline{SQ}$, $\overline{PR} \perp \overline{RQ}$ and $\overline{SQ} \perp \overline{RQ}$.

Which statement can be used to prove that $\triangle PQR \cong \triangle SRQ$?

A) AAS $\cong$ AAS   C) SAS $\cong$ SAS
B) HL $\cong$ HL   D) SSS $\cong$ SSS

9) In the accompanying diagram of quadrilateral QRST, $\overline{RS} \cong \overline{ST}$, $\overline{SR} \perp \overline{QR}$, and $\overline{ST} \perp \overline{QT}$.

Which method of proof may be used to prove $\triangle QRS \cong \triangle QTS$?

A) ASA   C) AAS

B) HL   D) SAS

10) In the diagram below, $\triangle PQR \cong \triangle STR$.

Complete the statement $\angle Q \cong$?.

A) $\angle S$ C) $\angle TRS$

B) $\angle PRQ$ D) $\angle T$

Questions 11 and 12 refer to the following:

Given the partial proof below.

Given: $\overline{PQ} = \overline{UT}$, $\overline{PS} = \overline{UR}$, $\overline{QR} = \overline{ST}$
Prove: $\triangle VRS$ is isosceles

STATEMENT	REASON
(1) $\overline{PQ} = \overline{UT}$, $\overline{PS} = \overline{UR}$, $\overline{QR} = \overline{ST}$	(1) Given
(2) $\overline{RS} \cong \overline{RS}$	(2) Reflexive Property of Equality
(3) _____	(3) Addition Property of Equality
(4) $\overline{QS} \cong \overline{TR}$	(4) _____
(5) $\triangle PQS \cong \triangle UTR$	(5) SSS $\cong$ SSS
(6) $\angle PSQ \cong \angle URT$	(6) CPCTC
(7) $\overline{VR} \cong \overline{VS}$	(7) If two $\angle$s of a $\triangle$ are $\cong$, the sides opposite these $\angle$s are $\cong$.
(8) $\triangle VRS$ is isosceles	(8) An isosceles $\triangle$ is a $\triangle$ with two $\cong$ sides.

11) What could be the statement for reason number 3 in the given proof?

A) $PV + VS = UV + VR$

B) $QR + RS = TS + RS$

C) $\angle PQR + \angle VRS = \angle UTR + \angle VSR$

D) $PS - VS = UR - VR$

12) What could be the reason for statement number 4 in the given proof?

A) Reflexive Property of Equality

B) Halves of equals are equal.

C) The whole is equal to the sum of its parts.

D) An isosceles triangle is a triangle with two congruent legs.

13) Supply the missing reason(s) for the given proof.

F

D   G   E

Given: $\overline{FG} \perp \overline{DE}$
        G is midpoint
        of $\overline{DE}$.

Prove: $\triangle DFG \cong \triangle EFG$
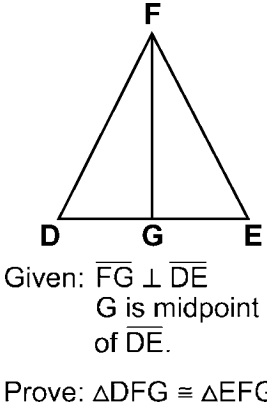
STATEMENTS		REASONS
(1) $\overline{FG} \perp \overline{DE}$ G is midpoint of $\overline{DE}$.	(1)	
(2) $\overline{DG} \cong \overline{GE}$	(2)	
(3) ∠DGF and ∠EGF are right angles.	(3)	
(4) ∠DGF ≅ ∠EGF	(4)	
(5) $\overline{FG} \cong \overline{FG}$	(5)	
(6) $\triangle DFG \cong \triangle EFG$	(6)	

14)

F

S

T

A

O
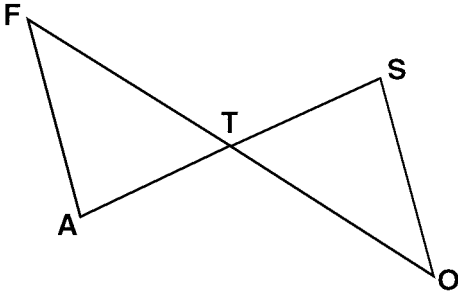
Given: $\overline{FO}$ bisects $\overline{AS}$
        ∠A ≅ ∠S

Prove: $\triangle FAT \cong \triangle OST$

15)

P

Q   R   S

T
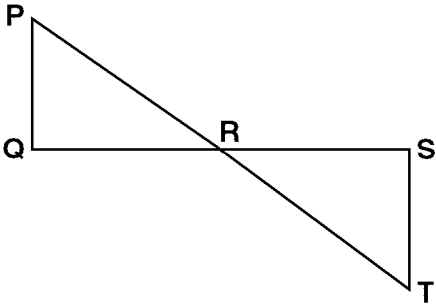
Given: $\overline{PQ} \perp \overline{QS}$
        $\overline{TS} \perp \overline{QS}$
        R is the midpoint of $\overline{QS}$

Prove: ∠P ≅ ∠T

16)
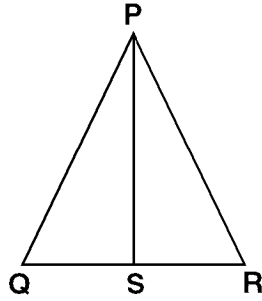
Given: $\overline{PS} \perp \overline{QR}$
$\overline{PS}$ bisects $\angle QPR$

Prove: $\angle Q \cong \angle R$

17)
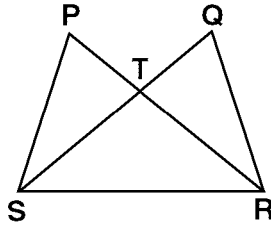
Given: $\overline{TS} \cong \overline{TR}$
$\angle P \cong \angle Q$

Prove: $\overline{PS} \cong \overline{QR}$

18)
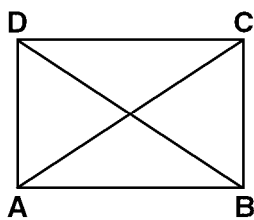
Given: $\overline{DA} \cong \overline{CB}$
$\overline{DA} \perp \overline{AB}$
$\overline{CB} \perp \overline{AB}$

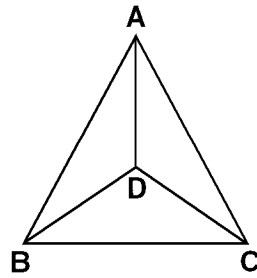Prove: $\overline{BD} \cong \overline{AC}$

19)
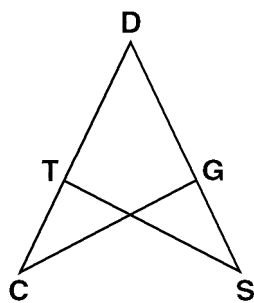
Given: $\overline{DTC} \cong \overline{DGS}$
$\angle C \cong \angle S$

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

20)

Given: $\overline{AB} \cong \overline{AC}$
$\overline{BD} \cong \overline{DC}$

Prove: $\overline{AD}$ bisects $\angle BAC$

21)
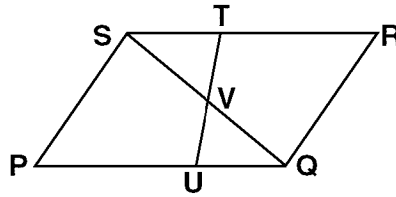
Given: $\overline{PS} \cong \overline{QR}$
$\overline{SR} \cong \overline{PQ}$
$\overline{TU}$ bisects $\overline{SQ}$

Prove: V is the midpoint of $\overline{TU}$

1) A 2) A 3) C 4) A 5) B

6) A 7) A 8) C 9) B 10) D

11) B 12) C

13) Answers vary.

14) Answer is a ASA proof.

15) Answer is an ASA proof.

16) Answer is an ASA proof.

17) Answer is an AAS proof.

18) Answer is a proof.

19) Answer is a proof.

20) Answer is a SSS proof.

21) Answer is a proof.