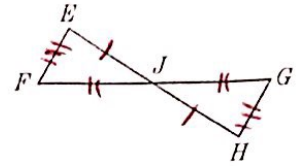


Provide the missing information in the following two-column proofs.

1. Given:  $\overline{EF} \cong \overline{HG}$ ,  $J$  is midpoint of  $\overline{EH}$  and  $\overline{FG}$

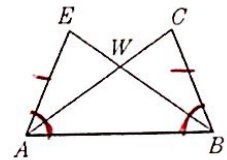
Prove:  $\triangle FEJ \cong \triangle GHJ$



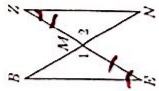
statement	reason
1. $J$ is midpoint of $\overline{EH}$ and $\overline{FG}$ and $\overline{EF} \cong \overline{HG}$	1. Given
2. $\overline{EJ} \cong \overline{HJ}$	2. Def. of midpoint
3. $\overline{FJ} \cong \overline{GJ}$	3. Def. of midpoint
4. $\triangle FEJ \cong \triangle GHJ$	4. SSS $\cong$

2. Given:  $\overline{EA} \cong \overline{CB}$ ,  $\angle EAB \cong \angle CBA$

Prove:  $\triangle BAE \cong \triangle ABC$

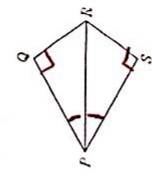


statement	reason
1. $\overline{EA} \cong \overline{CB}$	1. Given
2. $\angle EAB \cong \angle CBA$	2. Given
3. $\overline{AB} \cong \overline{AB}$	3. Reflexive Property
4. $\triangle BAE \cong \triangle ABC$	4. SAS $\cong$



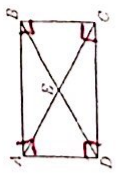
3. Given:  $M$  is midpoint of  $\overline{BZ}$ ,  $\angle E \cong \angle Z$   
 Prove:  $\triangle BME \cong \triangle NMZ$

statement	reason
1. $M$ is midpoint of $\overline{BZ}$	Given
2. $\overline{ME} \cong \overline{MZ}$	Def. of midpoint
3. $\angle E \cong \angle Z$	Given
4. $\angle 1 \cong \angle 2$	vertical angles are congruent
5. $\triangle BME \cong \triangle NMZ$	ASA $\cong$



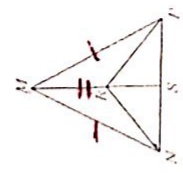
4. Given:  $\overline{PR}$  bisects  $\angle SPQ$ ,  $\angle Q$  and  $\angle S$  are right angles  
 Prove:  $\triangle PQR \cong \triangle PSR$

statement	reason
1. $\overline{PR}$ bisects $\angle SPQ$	Given
2. $\angle QPR \cong \angle SPR$	Def. of angle bisector
3. $\angle Q \cong \angle S$	right angles $\cong$
4. $\overline{PR} \cong \overline{PR}$	reflexive property
5. $\triangle PQR \cong \triangle PSR$	ASA $\cong$



5. Given:  $\overline{AB} \perp \overline{AD}$ ,  $\overline{AB} \perp \overline{BC}$ ,  $\overline{AC} \cong \overline{BD}$   
 Prove:  $\angle ADB \cong \angle BCA$

statement	reason
1. $\overline{AB} \perp \overline{AD}$ , $\overline{AB} \perp \overline{BC}$	Given
2. $\angle DAB$ and $\angle CBA$ are rt. $\angle$ s	Def. of perp.
3. $\angle DAB \cong \angle CBA$	All right $\angle$ are $\cong$
4. $\overline{AC} \cong \overline{BD}$	Given
5. $\overline{AB} \cong \overline{AB}$	Reflexive property
6. $\triangle DAB \cong \triangle CBA$	HL $\cong$
7. $\angle ADB \cong \angle BCA$	CPCTC



6. Given:  $\overline{MN} \cong \overline{MP}$ ,  $\overline{MS}$  bisects  $\angle NMP$   
 Prove:  $\overline{RN} \cong \overline{RP}$

statement	reason
1. $\overline{MN} \cong \overline{MP}$	Given
2. $\angle NMR \cong \angle PMR$	Def. $\angle$ Bisector
3. $\overline{MR} \cong \overline{MR}$	Reflexive property
4. $\triangle NMR \cong \triangle PMR$	SAS $\cong$
5. $\overline{RN} \cong \overline{RP}$	CPCTC

Name: \_\_\_\_\_ Date: \_\_\_\_\_

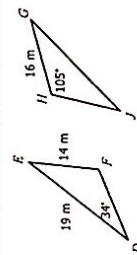
Geometry  
Unit 4: Congruent Triangles

Quiz 4-2: Congruent Triangles, SSS, and SAS

1. If  $\triangle CFE \cong \triangle PTR$ , complete each of the following statements.

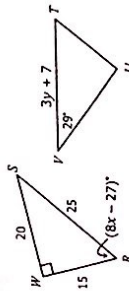
- a)  $\overline{CF} \cong \overline{PR}$       d)  $\angle P \cong \angle C$       g)  $\triangle RPT \cong \triangle ECF$   
 b)  $\overline{TR} \cong \overline{FE}$       e)  $\angle E \cong \angle R$       h)  $\triangle FEC \cong \triangle TRP$   
 c)  $\overline{CF} \cong \overline{PT}$       f)  $\angle F \cong \angle T$       i)  $\triangle RTP \cong \triangle EFC$

2. If  $\triangle DEF \cong \triangle GHI$ , find each missing measure.



- a)  $DF = 16$   
 b)  $JH = 14$   
 c)  $GJ = 19$

3. Given  $\triangle RWS \cong \triangle TUV$ , find the values of x and y.



3.  $x = 11$   
 $y = 6$

For part (a), determine whether the triangles are congruent by SSS or SAS. If not congruent, write "not congruent." If congruent, write a congruency statement for part (b).



- (a) SSS  
 (b)  $\triangle RPO \cong \triangle SQO$



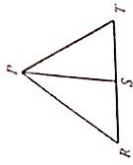
- (a) Not  $\cong$   
 (b) ~~SAS~~



- (a) SAS  
 (b)  $\triangle ACB \cong \triangle DBC$



- (a) SAS  
 (b)  $\triangle JLK \cong \triangle LNM$



8. Given: S is the midpoint of  $\overline{RT}$ ;  $\overline{PS} \perp \overline{RT}$   
 Prove:  $\triangle PRS \cong \triangle PTS$

Statements	Reasons
1. S is the midpt.	1. Given
2. $RS \cong TS$	2. Def of midpt
3. $PR \cong PT$	3. Given
4. $\angle PSR \cong \angle PTS$	4. Reflexive prop.
5. $\triangle PRS \cong \triangle PTS$	5. SSS



9. Given: E is the midpoint of  $\overline{AB}$  and  $\overline{CD}$   
 Prove:  $\triangle AEC \cong \triangle BED$

Statements	Reasons
1. E is midpt of $\overline{AB}$ and $\overline{CD}$	1. Given
2. $AE \cong EB$	2. Def. of midpt
3. $CE \cong ED$	3. Def. of midpt
4. $\angle AEC \cong \angle BED$	4. Vertical $\angle$ s
5. $\triangle AEC \cong \triangle BED$	5. SAS

10. Given the coordinates below, determine if  $\triangle FGH$  and  $\triangle KJL$  are congruent. If they are, explain why and write a congruency statement.

$F(-5, 10)$ ,  $G(-2, 2)$ ,  $H(-9, -7)$ ,  $J(0, -5)$ ,  $K(9, 2)$ ,  $L(-8, -2)$

$FG = \sqrt{73}$	$JK = \sqrt{130}$
$GH = \sqrt{130}$	$KL = \sqrt{305}$
$FH = \sqrt{305}$	$JL = \sqrt{73}$
Conclusion: <u>By SSS <math>\triangle FGH \cong \triangle KJL</math></u>	

LOOK UP  
Distance  
Formula