

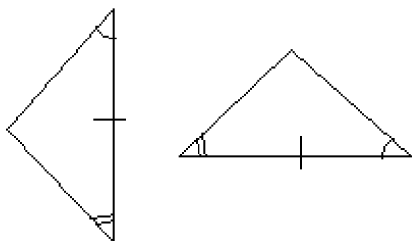
Geo, Chap 4 Practice Test, EV Ver 1

Multiple Choice

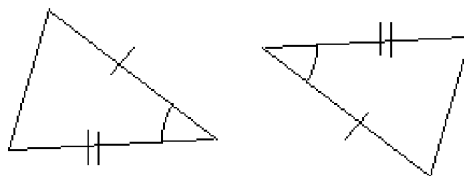
Identify the choice that best completes the statement or answers the question.

- _____ 1. (4-3) In each pair of triangles, parts are congruent as marked. Which pair of triangles is congruent by ASA?

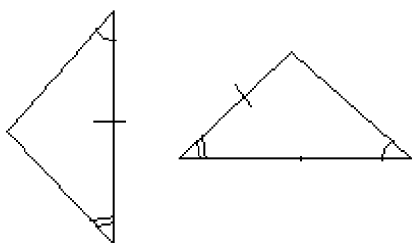
a.



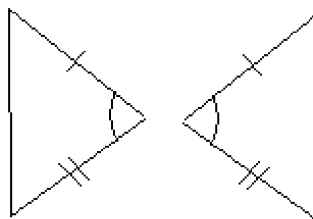
c.



b.



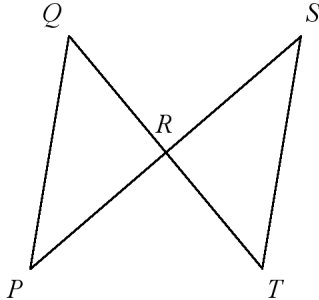
d.



- _____ 2. (4-4) Supply the missing reasons to complete the proof.

Given: $\angle Q \cong \angle T$ and $\overline{QR} \cong \overline{TR}$

Prove: $\overline{PR} \cong \overline{SR}$



Statement	Reasons
1. $\angle Q \cong \angle T$ and $\overline{QR} \cong \overline{TR}$	1. Given
2. $\angle PRQ \cong \angle SRT$	2. Vertical angles are congruent.
3. $\triangle PRQ \cong \triangle SRT$	3. _____ ? _____
4. $\overline{PR} \cong \overline{SR}$	4. _____ ? _____

- a. AAS; CPCTC
b. SAS; CPCTC

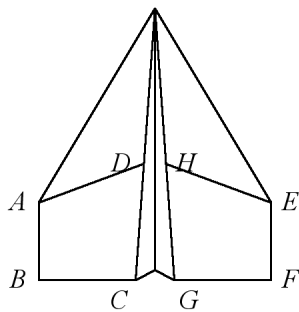
- c. ASA; Substitution
d. ASA; CPCTC

- _____ 3. (4-4) R , S , and T are the vertices of one triangle. E , F , and D are the vertices of another triangle. $m\angle R = 80$, $m\angle S = 60$, $m\angle F = 80$, $m\angle D = 40$, $RS = 4$, and $EF = 4$. Are the two triangles congruent? If yes, explain and tell which segment is congruent to $\overline{RT}$.
- a. yes, by ASA; $\overline{FD}$
b. yes, by AAS; $\overline{ED}$
c. yes, by SAS; $\overline{ED}$
d. No, the two triangles are not congruent.

Short Answer

4. (4-1) If $BCDE$ is congruent to $OPQR$, then $\overline{BC}$ is congruent to ? .

5. (4-1) In the paper airplane, $ABCD \cong EFGH$, $m\angle B = m\angle BCD = 90$, and $m\angle BAD = 126$. Find $m\angle GHE$.



6. (4-1) Given $\triangle QRS \cong \triangle TUV$, $QS = 5v + 2$, and $TV = 8v - 7$, find the length of QS and TV .

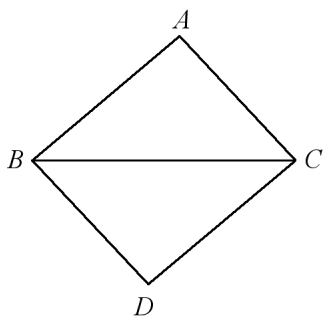
Name: _____

ID: A

7. (4-2) Justify the last two steps of the proof.

Given: $\overline{AB} \cong \overline{DC}$ and $\overline{AC} \cong \overline{DB}$

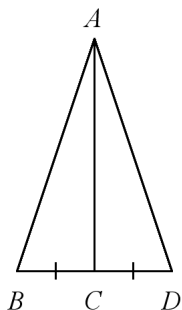
Prove: $\triangle ABC \cong \triangle DCB$



Proof:

- | | |
|--|-------------|
| 1. $\overline{AB} \cong \overline{DC}$ | 1. Given |
| 2. $\overline{AC} \cong \overline{DB}$ | 2. Given |
| 3. $\overline{BC} \cong \overline{CB}$ | 3. <u>?</u> |
| 4. $\triangle ABC \cong \triangle DCB$ | 4. <u>?</u> |

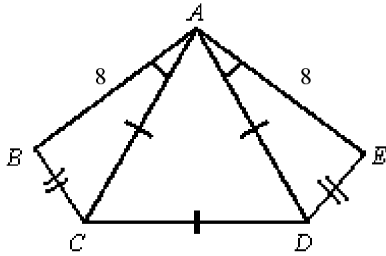
8. (4-2) What other information do you need in order to prove the triangles congruent using the SAS Congruence Postulate?



Name: _____

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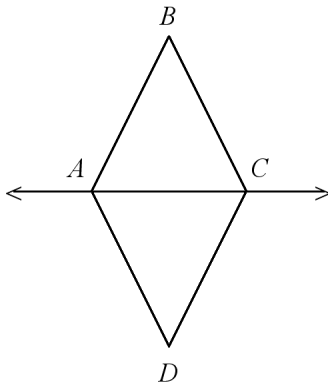
9. (4-2) State whether $\triangle ABC$ and $\triangle AED$ are congruent. Justify your answer.



10. (4-3) What is the missing reason in the two-column proof?

Given: $\overrightarrow{AC}$ bisects $\angle DAB$ and $\overrightarrow{CA}$ bisects $\angle DCB$

Prove: $\triangle DAC \cong \triangle BAC$



Statements

1. $\overrightarrow{AC}$ bisects $\angle DAB$
2. $\angle DAC \cong \angle BAC$
3. $\overline{AC} \cong \overline{AC}$
4. $\overrightarrow{CA}$ bisects $\angle DCB$
5. $\angle DCA \cong \angle BCA$
6. $\triangle DAC \cong \triangle BAC$

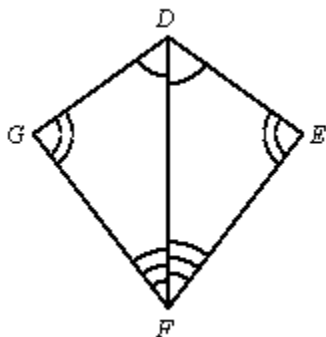
Reasons

1. Given
2. Definition of angle bisector
3. Reflexive property
4. Given
5. Definition of angle bisector
6. ?

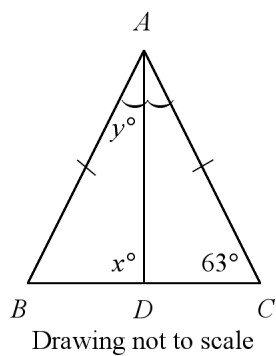
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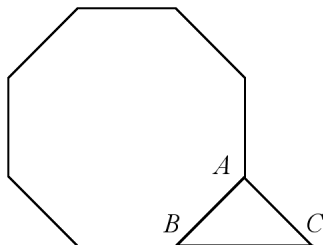
11. (4-3) From the information in the diagram, can you prove $\triangle FDG \cong \triangle FDE$? Explain.



12. (4-5) Find the values of x and y .



13. (4-5) The octagon in the figure is equiangular and $\overline{AB} \cong \overline{AC}$. Find $m\angle ACB$.



Name: _____

ID: A

14. (4-5) Two sides of an equilateral triangle have lengths $3x + 4$ and $2x + 8$. Which of $20 - x$ or $6x + 1$ could be the length of the third side?
15. (4-6) $\overline{YX}$ is perpendicular to $\overline{WZ}$ at X between W and Z . $\angle ZWY \cong \angle WZY$. By which of the five congruence statements, HL, AAS, ASA, SAS, and SSS, can you conclude that $\triangle WXY \cong \triangle ZXY$?

Geo, Chap 4 Practice Test, EV Ver 1

Answer Section

MULTIPLE CHOICE

1. ANS: A PTS: 1 DIF: L2
REF: 4-3 Triangle Congruence by ASA and AAS
OBJ: 4-3.1 Using the ASA Postulate and the AAS Theorem STA: CA GEOM 2.0| CA GEOM 5.0
TOP: 4-3 Example 1 KEY: ASA
2. ANS: D PTS: 1 DIF: L2
REF: 4-4 Using Congruent Triangles: CPCTC
OBJ: 4-4.1 Proving Parts of Triangles Congruent STA: CA GEOM 5.0| CA GEOM 6.0
TOP: 4-4 Example 1 KEY: ASA | CPCTC | proof
3. ANS: A PTS: 1 DIF: L3
REF: 4-4 Using Congruent Triangles: CPCTC
OBJ: 4-4.1 Proving Parts of Triangles Congruent STA: CA GEOM 5.0| CA GEOM 6.0
TOP: 4-4 Example 1 KEY: ASA | CPCTC | word problem

SHORT ANSWER

4. ANS:
 $\overline{OP}$

PTS: 1 DIF: L2 REF: 4-1 Congruent Figures
OBJ: 4-1.1 Congruent Figures STA: CA GEOM 4.0| CA GEOM 5.0| CA GEOM 12.0
TOP: 4-1 Example 1 KEY: congruent figures | corresponding parts | word problem
5. ANS:
54

PTS: 1 DIF: L2 REF: 4-1 Congruent Figures
OBJ: 4-1.1 Congruent Figures STA: CA GEOM 4.0| CA GEOM 5.0| CA GEOM 12.0
TOP: 4-1 Example 2 KEY: congruent figures | corresponding parts
6. ANS:
17

PTS: 1 DIF: L3 REF: 4-1 Congruent Figures
OBJ: 4-1.1 Congruent Figures STA: CA GEOM 4.0| CA GEOM 5.0| CA GEOM 12.0
KEY: congruent figures | corresponding parts
7. ANS:
Reflexive Property of $\cong$; SSS

PTS: 1 DIF: L2 REF: 4-2 Triangle Congruence by SSS and SAS
OBJ: 4-2.1 Using the SSS and SAS Postulates STA: CA GEOM 2.0| CA GEOM 5.0
TOP: 4-2 Example 1 KEY: SSS | reflexive property | proof

8. ANS:
 $\overline{AC} \perp \overline{BD}$

PTS: 1 DIF: L2 REF: 4-2 Triangle Congruence by SSS and SAS
 OBJ: 4-2.1 Using the SSS and SAS Postulates STA: CA GEOM 2.0| CA GEOM 5.0
 TOP: 4-2 Example 2 KEY: SAS | reasoning

9. ANS:
 yes, by either SSS or SAS

PTS: 1 DIF: L2 REF: 4-2 Triangle Congruence by SSS and SAS
 OBJ: 4-2.1 Using the SSS and SAS Postulates STA: CA GEOM 2.0| CA GEOM 5.0
 TOP: 4-2 Example 3 KEY: SSS | SAS | reasoning

10. ANS:
 ASA Postulate

PTS: 1 DIF: L2 REF: 4-3 Triangle Congruence by ASA and AAS
 OBJ: 4-3.1 Using the ASA Postulate and the AAS Theorem STA: CA GEOM 2.0| CA GEOM 5.0
 TOP: 4-3 Example 4 KEY: ASA | proof

11. ANS:
 yes, by ASA

PTS: 1 DIF: L2 REF: 4-3 Triangle Congruence by ASA and AAS
 OBJ: 4-3.1 Using the ASA Postulate and the AAS Theorem STA: CA GEOM 2.0| CA GEOM 5.0
 TOP: 4-3 Example 3 KEY: ASA | reasoning

12. ANS:
 $x = 90, y = 27$

PTS: 1 DIF: L2 REF: 4-5 Isosceles and Equilateral Triangles
 OBJ: 4-5.1 The Isosceles Triangle Theorems
 STA: CA GEOM 4.0| CA GEOM 5.0| CA GEOM 12.0 TOP: 4-5 Example 2
 KEY: angle bisector | isosceles triangle

13. ANS:
 45

PTS: 1 DIF: L3 REF: 4-5 Isosceles and Equilateral Triangles
 OBJ: 4-5.1 The Isosceles Triangle Theorems
 STA: CA GEOM 4.0| CA GEOM 5.0| CA GEOM 12.0 TOP: 4-5 Example 3
 KEY: isosceles triangle | Isosceles Triangle Theorem | Polygon Angle-Sum Theorem

14. ANS:
 $20 - x$ only

PTS: 1 DIF: L3 REF: 4-5 Isosceles and Equilateral Triangles
 OBJ: 4-5.1 The Isosceles Triangle Theorems
 STA: CA GEOM 4.0| CA GEOM 5.0| CA GEOM 12.0
 KEY: equilateral triangle | word problem | problem solving

15. ANS:
HL and AAS

PTS: 1 DIF: L3 REF: 4-6 Congruence in Right Triangles
OBJ: 4-6.1 The Hypotenuse-Leg Theorem STA: CA GEOM 2.0| CA GEOM 5.0
TOP: 4-6 Example 1
KEY: right triangle | HL Theorem | ASA | SAS | AAS | SSS | proof | word problem | problem solving | reasoning