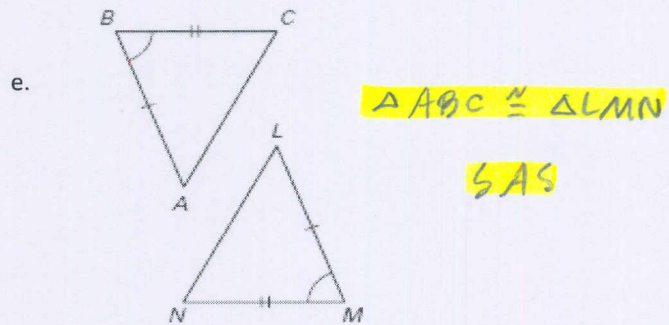
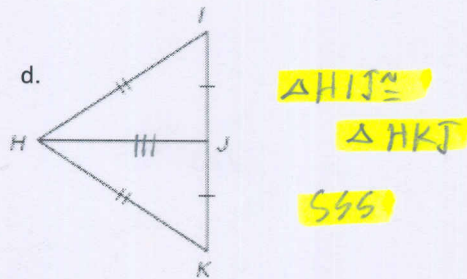
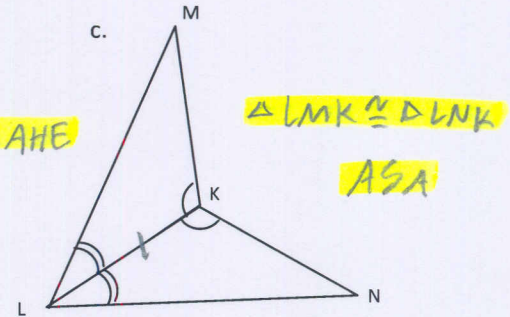
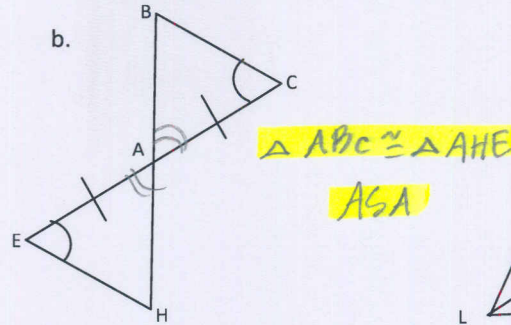
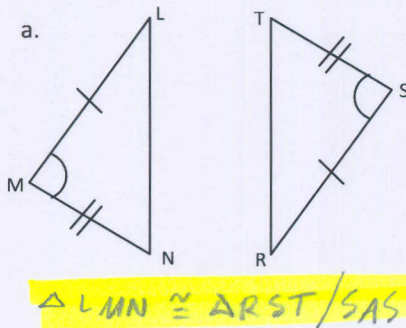


Congruent Triangles

1. Name the congruent triangles shown in the diagrams and state the postulate or theorem you would use.

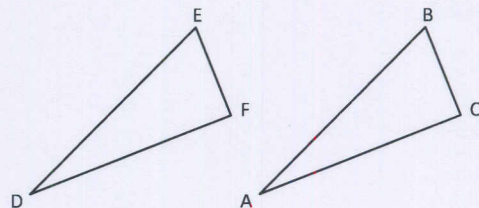


2. State the third congruence that is needed to prove that $\triangle ABC \cong \triangle DEF$.

a. GIVEN: $\overline{DE} \cong \overline{AB}$, $\angle D \cong \angle A$ $\angle F \cong \angle C$
USE: AAS Congruence

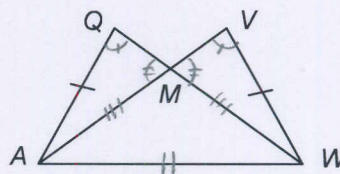
b. GIVEN: $\overline{DE} \cong \overline{AB}$, $\angle D \cong \angle A$ $\overline{DF} \cong \overline{AC}$
USE: SAS Congruence

c. GIVEN: $\overline{DE} \cong \overline{AB}$, $\angle D \cong \angle A$ $\angle E \cong \angle B$
USE: ASA Congruence



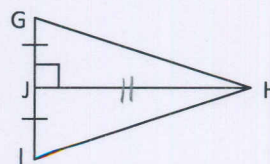
3. Given $\angle Q \cong \angle V$ and the figure shown, which statement is NOT necessarily true?

- a. $\triangle QAM \cong \triangle VWM$ ✓
- b. $\triangle QWA \cong \triangle VAW$
- c. $\triangle QAM \cong \triangle VMW$
- d. $\triangle WAM$ is isosceles ✓



4. Complete the congruence statement $\triangle GJH \cong$ ___ by ___.

- a. $\triangle GJH \cong \triangle IJH$ by HL
- b. $\triangle GJH \cong \triangle IHJ$ by HL
- c. $\triangle GJH \cong \triangle IJH$ by SAS
- d. $\triangle GJH \cong \triangle IHJ$ by SAS



Points of Concurrency

5. Define each and name the point of concurrency found by each:

- a. Altitudes:
- b. Medians:
- c. Perpendicular Bisectors
- d. Angles Bisectors:

} see vocabulary chart or textbook

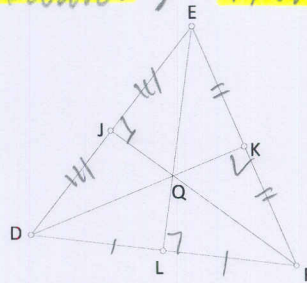
6. Which points of concurrency may lie outside the triangle? Which are always inside the triangle?

Circumcenter: orthocenter / Incenter: centroid

7. By the Concurrency of Perpendicular Bisectors

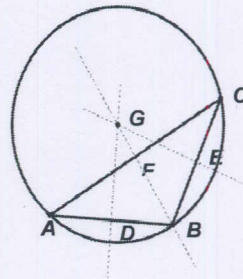
Theorem, if \overline{QJ} , \overline{QK} , and \overline{QL} are perpendicular bisectors, then $\underline{\quad? \quad}$. (multiple choice)

- a. $\angle JQK \cong \angle KQL \cong \angle LQJ$
- b. $DE = EF = FD$
- c. $QD = QE = QF$
- d. $\angle EQK \cong \angle FQL \cong \angle DQJ$



8. In the diagram, \overline{GE} , \overline{GD} and \overline{GF} are perpendicular bisectors of the sides of the triangle. G is the _____ of the triangle.

- a. circumcenter
- b. incenter
- c. orthocenter
- d. centroid
- e. center



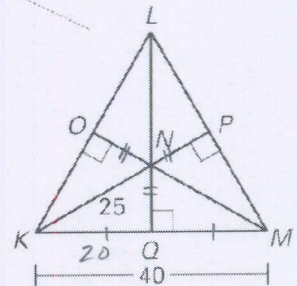
$\frac{MA}{CI} = \frac{PA}{CO}$

9. In the diagram at the right, the angle bisectors of $\triangle KLM$ meet at point N.

Q is the midpoint of \overline{KM} . Find NP.

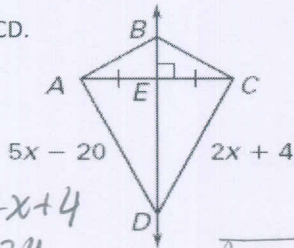
$NP = 15$

$25^2 = 20^2 + (NQ)^2$
 $225 = (NQ)^2$



10. Find each missing value.

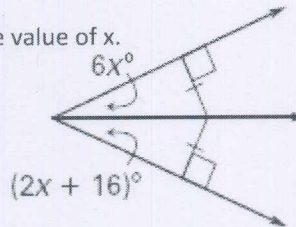
a. Find CD.



$5x - 20 = 2x + 4$
 $3x = 24$
 $x = 8$

$CD = 20$

b. Find the value of x.



$6x = 2x + 16$

$4x = 16$
 $x = 4$

11. Explain each theorem in your own words, using diagrams.

- a. Midsegment Theorem
- b. Perpendicular Bisector Theorem
- c. Concurrency of Perpendicular Bisectors Theorem
- d. Angle Bisector Theorem
- e. Concurrency of Angle Bisectors Theorem
- f. Concurrency of Medians Theorem

} see vocabulary chart or textbook