Republic of the Philippines
DEPARTMENT OF EDUCATION
National Capital Region
Schools Division Office, Quezon City
Sauyo High School

Name: _____ Date: _____
Section: _____ Score: _____

**Third Summative Test in Mathematics 8**
**S.Y. 2022–2023**

**Multiple Choice:** *Choose the letter that corresponds to the correct answer. Write the answer in your answer sheet.*

1. Statements that are assumed to be true without proof are called:
   A. Definition B. Law C. Postulate D. Theorem
2. The set of points consisting of the union of two rays with a common endpoint is called:
   A. Angle B. Bisector C. Segment D. Vertex
3. A structure that consists of defined and undefined terms, axioms or postulates, and theorems is called:
   A. Direct proof B. Indirect proof C. Law of Syllogism D. Mathematical system
4. Perpendicular lines ____ form right angles.
   A. always B. sometimes C. maybe D. never
5. Any three points not on the same line ____ determine a plane.
   A. always B. sometimes C. maybe D. never
6. A line ____ has endpoints.
   A. always B. sometimes C. maybe D. never
7. Which of the following objects represent a line?
   A. Blackboard B. Ruler C. Scissors D. Tip of a pen
8. Which of the following objects represent a point?
   A. Blackboard B. Ruler C. Scissors D. Tip of a pen
9. The following are characteristics of a line except:
   A. Has infinite depth B. Has infinite length C. Has zero width D. Has zero height
10. The following are characteristics of a plane except:
    A. Has zero thickness B. Has infinite length C. Has infinite width D. Has infinite height
11. Statements that are proved from definitions or using operations and facts that were already known are called:
    A. Axioms B. Postulates C. Proofs D. Theorems
12. What is the meaning of the acronym PIAT?
    A. Parallel Internal Angle Theorem C. Polygon Internal Angle Theorem
    B. Parallel Interior Angle Theorem D. Polygon Interior Angle Theorem
13. Which of the following theorems states that any two right angles are congruent?
    A. Complement Theorem C. Third Angles Theorem
    B. Right Angles Congruency Theorem D. Vertical Angle Theorem
14. Which theorem states that the sum of the degree measures of the angles of a triangle is 180°?
    A. Quadrilateral Interior Angle Theorem C. Supplement Theorem
    B. Supplement Postulate D. Triangle Interior Angle Theorem
15. Provide the reason for this statement: "If $\angle X$ and $\angle Y$ are vertical angles, then $\angle X \cong \angle Y$."
    A. Complement Theorem C. Third Angles Theorem
    B. Right Angles Congruency Theorem D. Vertical Angle Theorem
16. Provide the reason for this statement: "If $m\angle J + m\angle K = 90°$ and $m\angle K + m\angle L = 90°$, then $\angle J \cong \angle L$."
    A. Complement Theorem C. Supplement Postulate
    B. PCAC Postulate D. Supplement Theorem

17. The exterior angle of a triangle can be solved using:

A. Exterior Angles Theorem
C. Supplement Theorem
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18. Which of the following theorems may be used to solve the third angle of a triangle?

A. Complement Theorem
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19. The side common to two angles of a triangle is called:

A. Congruent side
B. Corresponding side
C. Included side
D. Paired side

20. The angle between two sides of a triangle is called:

A. Congruent $\angle$
B. Corresponding $\angle$
C. Included $\angle$
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21. Which triangle congruence postulate states that if the three sides of one triangle are congruent to the corresponding sides of another triangle, then the two triangles are congruent?

A. ASA Congruence Postulate
C. SSS Congruence Postulate
B. SAS Congruence Postulate
D. AAS Congruence Postulate

22. How do we determine if two triangles are congruent?

A. Corresponding sides must be congruent.

B. Corresponding angles must be congruent.

C. Corresponding sides and angles must be congruent.

D. Included sides and angles must be congruent.

23. Which of the following is NOT a property of congruence?

A. Additive Property
B. Reflexive Property
C. Symmetric Property
D. Transitive Property

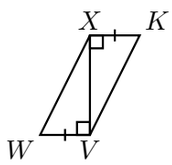
24. Given $\triangle ABC$, determine the included side between $\angle B$ and $\angle C$.

A. $\overline{AB}$
B. $\overline{AC}$
C. $\overline{BC}$
D. $\overline{BA}$

25. To which side does $\overline{BC}$ correspond if $\triangle ABC \cong \triangle HIJ$?

A. $\overline{HI}$
B. $\overline{IJ}$
C. $\overline{HJ}$
D. $\overline{IH}$

26. Which parts must be congruent if $\triangle XVW \cong \triangle VXK$ using the SSS congruence postulate?




A. $\overline{WV} \cong \overline{KX}$
B. $\overline{XV} \cong \overline{VX}$
C. $\overline{VW} \cong \overline{XK}$
D. $\overline{WX} \cong \overline{KV}$

27. "If two angles and the included side of one triangle are congruent to the corresponding two angles and included side of another triangle, then the two triangles are congruent." This is stated in:

A. ASA postulate
B. SAS postulate
C. SSS postulate
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28. Which triangle congruence postulate states that if the two sides and an included angle of one triangle are congruent to the corresponding two sides and included angle of another triangle, then the two triangles are congruent?

A. ASA postulate
B. SAS postulate
C. SSS postulate
D. AAS postulate

29. Which corresponding parts must be congruent if two triangles are congruent by the ASA postulate?

A. All sides
C. Two sides and the included angle
B. Two angles and the included side
D. All angles

30. If two triangles are congruent by the SAS triangle congruence postulate, then which corresponding parts must be congruent?

A. All sides
C. Two sides and the included angle
B. Two angles and the included side
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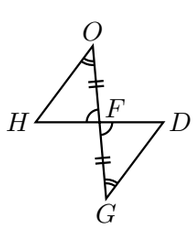
31. Which postulate can be used to conclude that $\triangle HOF \cong \triangle DGF$?




A. ASA postulate
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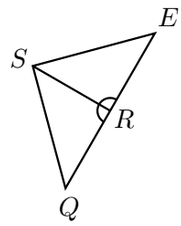
32. The figures are marked with their congruent parts. Determine the other congruent parts using the ASA congruence postulate.




A. $\overline{SR} \cong \overline{SR}$ B. $\overline{RQ} \cong \overline{RE}$ C. $\angle SRQ \cong \angle SRE$ D. $\angle RSQ \cong \angle RSE$

33. Which of the following is true about the corresponding parts of congruent triangles?

A. They are unequal.
B. They are congruent.
C. They are supplementary.
D. They are complementary.

34. How many pairs of corresponding congruent parts are there in two congruent triangles?

A. 2 B. 3 C. 4 D. 6

35. If $\triangle SIT \cong \triangle HOP$, then what angle corresponds to $\angle T$?

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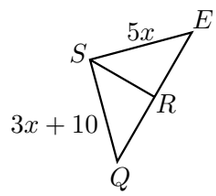
36. If $\triangle ESR \cong \triangle QSR$, then what is the measure of $SQ$?

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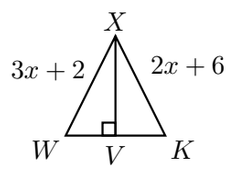
38. If $\triangle XWK$ is an equilateral triangle and $V$ is the midpoint of $\overline{WK}$, what is the measure of $\overline{WV}$?




A. 7 B. 9 C. 12 D. 14

39. "If two angles of a triangle are congruent, then the sides opposite those angles are also congruent." This is stated in:

A. Isosceles Triangle Theorem
B. Converse of Isosceles Triangle Theorem
C. AAS Triangle Congruence Theorem
D. LL Triangle Congruence Theorem

40. The congruent sides of an isosceles triangle are called:

A. Base B. Base angles C. Legs D. Vertex angle

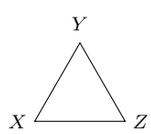
41. Which theorem states that if two sides of a triangle are congruent, then the angles opposite those sides are congruent?

A. Isosceles Triangle Theorem
B. Converse of Isosceles Triangle Theorem
C. AAS Triangle Congruence Theorem
D. LL Triangle Congruence Theorem

42. The angles opposite the congruent sides of an isosceles triangle are called:

A. Base B. Base angles C. Legs D. Vertex angle

43. Let $\triangle XYZ$ be an equilateral triangle. What theorem or postulate can justify that $\triangle XYZ$ is also equiangular?




A. Isosceles Triangle Theorem
B. Converse of Isosceles Triangle Theorem
C. AAS Triangle Congruence Theorem
D. LL Triangle Congruence Theorem

44. $\triangle ABC$ and $\triangle DEF$ are isosceles right triangles. If $\overline{AB} \cong \overline{DE}$ and $\overline{AC} \cong \overline{DF}$, which of the following statements is true by CPCTC?

A. $\overline{AC} \cong \overline{EF}$ B. $\overline{BC} \cong \overline{EF}$ C. $\overline{CA} \cong \overline{EF}$ D. $\overline{CB} \cong \overline{FD}$

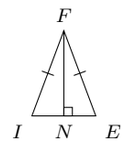
45. "If two angles and a non-included side of one triangle are congruent to the corresponding two angles and a non-induded side of another triangle, then the triangles are congruent." This is stated in:

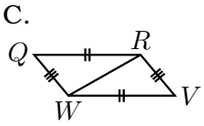
A. AAS Congruence Theorem
B. LL Congruence Theorem
C. HL Congruence Theorem
D. LA Congruence Theorem

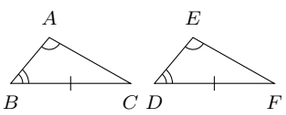
46. Which theorem states that if the legs of one right triangle are congruent to the legs of another right triangle, then the triangles are congruent?

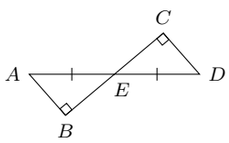
A. HA Congruence Theorem
C. LA Congruence Theorem
B. HL Congruence Theorem
D. LL Congruence Theorem

47. Which of the following pairs of triangles are congruent and can be proved by HL Theorem?

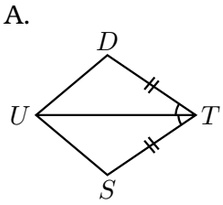
A. 

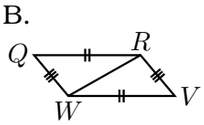

C. 

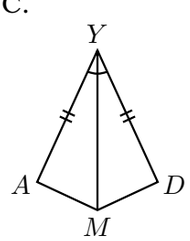

B. 

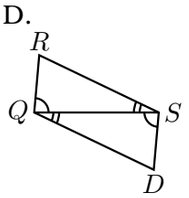

D. 


48. Which of the following pairs of triangles are congruent and can be proved by ASA Postulate?

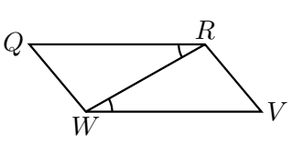
A. 


B. 


C. 

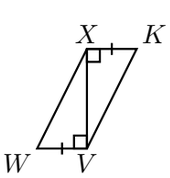

D. 


49. In the figure at the right, $\angle QRW \cong \angle VWR$. What additional data is needed to prove that $\triangle QRW \cong \triangle VWR$ by SAS Postulate?




A. $\overline{QW} \cong \overline{VR}$
B. $\overline{RQ} \cong \overline{WV}$
C. $\angle Q \cong \angle V$
D. $\angle QWR \cong \angle VRW$

50. In the figure at the right, $\overline{WV} \cong \overline{KX}$. What additional data is needed to prove that $\triangle XVW \cong \triangle VXK$ by SSS Congruence?




A. $\overline{XV} \cong \overline{XV}$
B. $\overline{WX} \cong \overline{KV}$
C. $\angle W \cong \angle K$
D. $\angle XVW \cong \angle VXK$

**Answer Key**

1. Statements that are assumed to be true without proof are called:

   **Solution:**

   A. Definition B. Law C. Postulate D. Theorem

2. The set of points consisting of the union of two rays with a common endpoint is called:

   **Solution:**

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3. A structure that consists of defined and undefined terms, axioms or postulates, and theorems is called:

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   **Solution:**

   A. always B. sometimes C. maybe D. never

5. Any three points not on the same line ____ determine a plane.

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   **Solution:**

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    **Solution:**

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    C. Polygon Internal Angle Theorem
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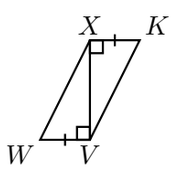


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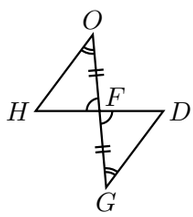


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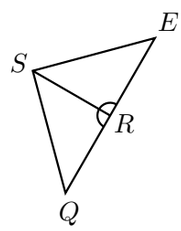


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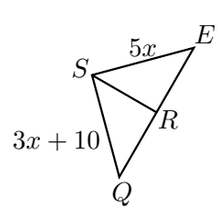


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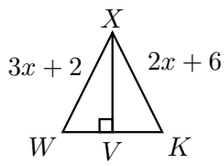


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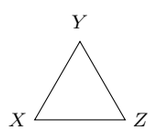
**Solution:**

A. Base B. Base angles C. Legs D. Vertex angle

43. Let $\triangle XYZ$ be an equilateral triangle. What theorem or postulate can justify that $\triangle XYZ$ is also equiangular?




**Solution:**

A. Isosceles Triangle Theorem
C. AAS Triangle Congruence Theorem
B. Converse of Isosceles Triangle Theorem
D. LL Triangle Congruence Theorem

44. $\triangle ABC$ and $\triangle DEF$ are isosceles right triangles. If $\overline{AB} \cong \overline{DE}$ and $\overline{AC} \cong \overline{DF}$, which of the following statements is true by CPCTC?

**Solution:**

A. $\overline{AC} \cong \overline{EF}$ B. $\overline{BC} \cong \overline{EF}$ C. $\overline{CA} \cong \overline{EF}$ D. $\overline{CB} \cong \overline{FD}$

45. "If two angles and a non-included side of one triangle are congruent to the corresponding two angles and a non-induded side of another triangle, then the triangles are congruent." This is stated in:

**Solution:**

A. AAS Congruence Theorem
C. HL Congruence Theorem
B. LL Congruence Theorem
D. LA Congruence Theorem

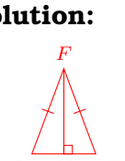
46. Which theorem states that if the legs of one right triangle are congruent to the legs of another right triangle, then the triangles are congruent?

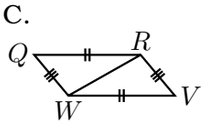
**Solution:**

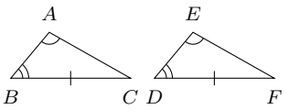
A. HA Congruence Theorem
C. LA Congruence Theorem
B. HL Congruence Theorem
D. LL Congruence Theorem

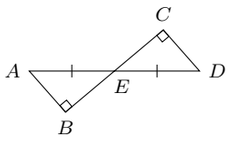
47. Which of the following pairs of triangles are congruent and can be proved by HL Theorem?

**Solution:**

A. 

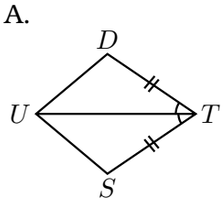

C. 

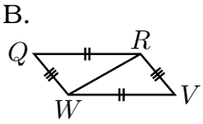
B. 

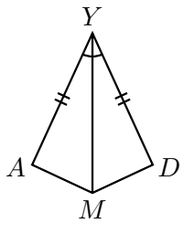

D. 

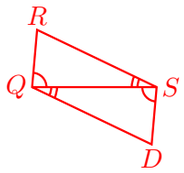

48. Which of the following pairs of triangles are congruent and can be proved by ASA Postulate?

**Solution:**

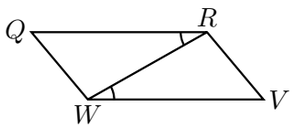
A. 


B. 


C. 


D. 

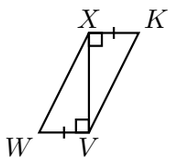

49. In the figure at the right, $\angle QRW \cong \angle VWR$. What additional data is needed to prove that $\triangle QRW \cong \triangle VWR$ by SAS Postulate?




**Solution:**

A. $\overline{QW} \cong \overline{VR}$ B. $\overline{RQ} \cong \overline{WV}$ C. $\angle Q \cong \angle V$ D. $\angle QWR \cong \angle VRW$

50. In the figure at the right, $\overline{WV} \cong \overline{KX}$. What additional data is needed to prove that $\triangle XVW \cong \triangle VXK$ by SSS Congruence?




**Solution:**

A. $\overline{XV} \cong \overline{XV}$ B. $\overline{WX} \cong \overline{KV}$ C. $\angle W \cong \angle K$ D. $\angle XVW \cong \angle VXK$