

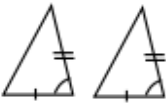
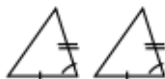
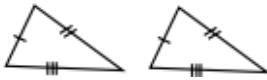
THIRD PERIODICAL TEST IN MATHEMATICS 8

NAME: _____ GR.& SEC. _____ SCORE: _____

Directions: Read the sentences below and identify what they refer to from the given choices below each. Write the letter of your answer directly in the blank.

- _____ 1. What do you call the statements that are assumed to be true and do not need proof?
A. axioms
B. defined terms
C. theorems
D. undefined terms
- _____ 2. Which of the following is the multiplicative inverse of $2x/3$?
A. $2x/3$ B. $3/2x$ C. $-3/2x$ D. $-2x/3$
- _____ 3. Which statement is true?
A. $3/4$ is an integer.
B. -5 is a natural number.
C. Integers are rational numbers.
D. Rational numbers are also irrational numbers.
- _____ 4. What axiom is illustrated in the statement, If $A = B$, $B = C$, then $A = C$?
A. multiplication
B. reflexive
C. symmetric
D. transitive
- _____ 5. Which of the following illustrates symmetric property?
A. If $a = b$, then $b = a$.
B. If $a = b$, then $ac = bc$
C. If $a = b$, then $a + c = b + c$.
D. If $a = b$ and $b = c$, then $a = c$.
- _____ 6. Using the distributive property, $5(x + y) =$ _____.
A. $5x + y$ C. $5x + 5y$
B. $y + 5x$ D. $5 + x + y$
- _____ 7. Name the property which justifies the following conclusion. Given: If $2x + 3 = 10$
Conclusion: then $2x = 7$
A. Addition property of equality
B. Multiplication property of equality
C. Reflexive property
D. Transitive property
- _____ 8. There are four parts of the Mathematical system. Which of the following is not a part of the mathematical system?
A. corollary
B. theorems
C. axioms or postulate
D. defined and undefined terms
- _____ 9. Which of the following statements is true about axioms or postulates?
A. These are concepts that need to be defined.
B. These are statements accepted after it is proved deductively.
C. These are concepts that can be defined using the undefined terms.
D. These are statements assumed to be true and need no further proof.
- _____ 10. Which of the following statements is true about a postulate?
A. It is never accepted to be true. B
B. It is accepted as true without a formal proof.
C. It is only accepted as true after being formally proven.
D. It is usually not obvious as true, so it must be proven.

- _____ 11. What figure is formed when two noncollinear rays meet in a common point?
A. square
B. triangle
C. plane
D. angle
- _____ 12. Which of the following statements represents the Segment Addition Postulate?
A. Points A, B, C are collinear and B is between A and B, then $AB + BC = AC$
B. Points A, B, C are collinear and B is between A and B, then $AB + AC = BC$
C. Points A, B, C are collinear and B is between A and B, then $AB = AC = BC$
D. Points A, B, C are collinear and B is between A and B, then $AB - BC = AC$
- _____ 13. Which statement justifies congruent angles?
A. If two lines intersect
B. If it has a common side
C. If it has the same measure
D. If the sum of two angles is 180°
- _____ 14. A triangular kite LMC has the following interior angles, 50° , 50° , and 80° . Liza concluded that the kite is an isosceles triangle. What theorem would support her conclusion?
A. isosceles triangle theorem
B. exterior angle theorem
C. linear pair theorem
D. vertical angles theorem
- _____ 15. You are tasked to make a triangular picture frame and your teacher gives you two sticks of the same length and one shorter length. What type of triangle can you make out of the materials given if you are not allowed to cut the stick?
A. scalene triangle
B. equilateral triangles
C. isosceles triangle
D. the materials cannot form a triangle
- _____ 16. Which of the following is a symbol used for congruence?
A. =
B. $\neq$
C. $\approx$
D. $\cong$
- _____ 17. How many pairs of corresponding congruent angles are there in two congruent triangles?
A. 1
B. 2
C. 3
D. 4
- _____ 18. Which of the symbols below is used to indicate correspondence?
A. $\cong$
B. $\angle$
C. Δ
D. $\leftrightarrow$
- _____ 19. Which of the following statements best describes congruent triangles?
I. They are similar.
II. They have the same size.
III. They have the same shape.
IV. They are equilateral triangles.
A. I only
B. III only
C. III and IV together
D. II and III together
- _____ 20. How many pairs of corresponding sides are there in two congruent triangles?
A. 1
B. 2
C. 3
D. 4
- _____ 21. Which of the following statements best describes the corresponding parts of congruent triangles?
A. They are not equal.
B. They are congruent.
C. They are supplementary.
D. They are complementary.

22. Which segment corresponds to $\overline{NT}$?
- A. $\overline{AT}$ C. $\overline{CM}$
B. $\overline{AC}$ D. $\overline{MA}$
23. Which angle corresponds to $\angle T$?
- A. $\angle A$ C. $\angle M$
B. $\angle C$ D. $\angle N$
24. Which vertex corresponds to A?
- A. A C. N
B. M D. T
25. What conclusion can you make in the figure?
- A. $\triangle ANT \cong \triangle MAC$
B. $\triangle ANT \cong \triangle CAM$
C. $\triangle AMC \cong \triangle ATN$
D. $\triangle AMC \cong \triangle TAN$
26. Which of the illustrations below represents the ASA Congruence Postulate?
- A.  C. 
B.  D. 
27. Which of the illustrations below represents the SAS Congruence Postulate?
- A.  C. 
B.  D. 
28. Given $\triangle LOT$, what is the included angle between $\overline{LO}$ and $\overline{OT}$?
- A. $\angle L$ C. $\angle T$
B. $\angle O$ D. $\angle TLO$
29. Given $\triangle MAD$, what is the included side between $\angle M$ and $\angle D$?
- A. $\overline{MA}$ C. $\overline{AD}$
B. $\overline{MD}$ D. $\overline{AM}$
30. Given $\triangle RED$, what is the included side between $\angle E$ and $\angle D$?
- A. $\overline{ED}$ C. $\overline{RD}$
B. $\overline{RE}$ D. $\overline{DR}$
31. Given that $\triangle ALS \cong \triangle BKD$, what segment corresponds to $\overline{AS}$?
- A. $\overline{AK}$ C. $\overline{LB}$
B. $\overline{BD}$ D. $\overline{SK}$

_____ 32. Given that $\triangle HIJ \cong \triangle LMN$, what angle corresponds to $\angle J$?

- A. $\angle H$ C. $\angle M$
B. $\angle I$ D. $\angle N$

_____ 33. If $\triangle SIN \cong \triangle COS$, which of the following is NOT true?

- A. $\angle I \cong \angle O$ C. $\overline{IN} \cong \overline{OC}$
B. $\angle S \cong \angle C$ D. $\overline{NI} \cong \overline{SO}$

_____ 34. If $\triangle LUV \cong \triangle YAH$, then $\triangle HAY$ is congruent to _____.

- A. $\triangle AYH$ C. $\triangle UVL$
B. $\triangle LVU$ D. $\triangle VUL$

_____ 35. If $\angle E \leftrightarrow \angle N$, $\angle V \leftrightarrow \angle S$ and $\angle R \leftrightarrow \angle M$, then $\triangle EVR \cong$ _____.

- A. $\triangle NSM$ C. $\triangle NSR$
B. $\triangle MNS$ D. $\triangle SRV$

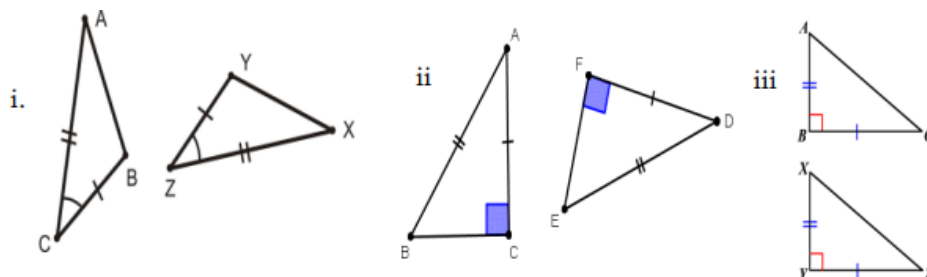
_____ 36. Which of the theorems below states that: "If two angles and a non-included side of one triangle are congruent to the corresponding two angles and a non-included side of another triangle, then the triangles are congruent."?

- A. HyA Congruence Theorem C. LL Congruence Theorem
B. HyL Congruence Theorem D. AAS Congruence Theorem

_____ 37. Which of the following theorems states that: "If the hypotenuse and an acute angle of one right triangle are congruent to the corresponding hypotenuse and an acute angle of another right triangle, then the triangles are congruent."?

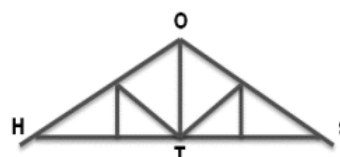
- A. HyA Congruence Theorem C. LA Congruence Theorem
B. HyL Congruence Theorem D. LL Congruence Theorem

_____ 38. Which of the following pairs of triangles below are congruent and can be proved by SAS Congruence?



- A. i and ii C. iii
B. ii and iii D. i, ii, and iii

_____ 39. In the figure at the right, $\overline{OT}$ is a perpendicular bisector of $\overline{HS}$ at T. What triangle congruence theorem can be used to prove that $\triangle HOT \cong \triangle SOT$?

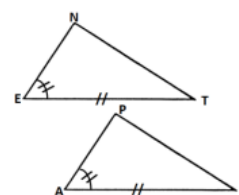


- A. LL Congruence Theorem C. HyL Congruence Theorem
B. HyA Congruence Theorem D. AAS Congruence Theorem

_____ 40. In the figures at the right, $\angle E \cong \angle A$, $\overline{ET} \cong \overline{AY}$.

What additional data is needed to prove that $\triangle NET \cong \triangle PAY$ by SAS Congruence?

- A. $\angle N \cong \angle P$ C. $\overline{NE} \cong \overline{PA}$
B. $\angle T \cong \angle Y$ D. $\overline{NT} \cong \overline{PY}$



_____ 41. Which statement is NOT sufficient to prove the congruence of two triangles?

- A. Two angles and the included side of one triangle are congruent respectively to the two

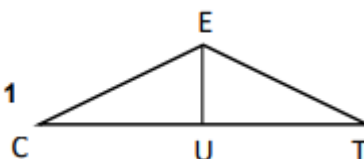
- angles and the included side of another triangle.
- B. Two sides of one triangle are congruent respectively to the two sides of another triangle
- C. Two angles and the non-included side of one triangle are congruent respectively to the two angles and the non-included side of another triangle.
- D. Three sides of one triangle are congruent respectively to the three sides of another triangle.

For items 42 to 44, complete the table below. Choose the letter of the correct answer from the choices provided.

- A. $\angle CUE$ and $\angle TUE$ are right angles
 B. Given
 C. $EU \cong EU$
 D. SAS Congruence Postulate
 E. Right Angle Theorem

Given: $\overline{EU}$ is the $\perp$ bisector of $\overline{CT}$
 Prove: $\triangle CUE \cong \triangle TUE$

Figure No. 1



Proof:

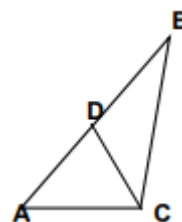
Statements	Reasons
1. $\overline{EU}$ is the $\perp$ bisector of $\overline{CT}$	(7)
2. $\angle CUE$ and $\angle TUE$ are right angles	Definition of Perpendicular Line Segments
3. $\angle CUE \cong \angle TUE$	Right Angle Theorem
4. $\overline{CU} \cong \overline{UT}$	Definition of $\perp$ bisector
5. (8)	Reflexive Property
6. $\triangle CUE \cong \triangle TUE$	(9)

- ____ 45. Which of the following refers to the triangles that have common region?
- A. Multiple triangles
 B. Isosceles triangles
 C. Congruent triangles
 D. Overlapping triangles
- ____ 46. Which of the following theorems states that, “if two sides of a triangle are congruent, then the angles opposite them are congruent.”?
- A. Right Angle Theorem
 B. Isosceles Triangle Theorem
 C. Interior Angles of a Triangle Theorem
 D. Exterior Angles of a Triangle Theorem

For items 47 and 48, use the figure at the right.

- ____ 47. In an isosceles $\triangle ABC$, let $\overline{CD}$ be an angle bisector of $\angle BCA$. What theorem or postulate can justify $\triangle DCA \cong \triangle DCB$?

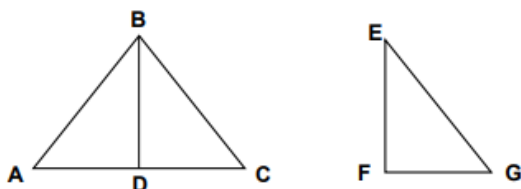
- A. Angle-Angle-Side
 B. Hypotenuse-Acute Angle
 C. HypotenuseLeg
 D. Side-AngleSide



_____ 48. In item number 3, $\triangle DCA \cong \triangle DCB$. What other corresponding sides are congruent by CPCTC aside from $\overline{CD} \cong \overline{CD}$?

- A. $\overline{CD} \cong \overline{CA}$ C. $\overline{DA} \cong \overline{DB}$
 B. $\overline{CD} \cong \overline{CB}$ D. $\overline{DA} \cong \overline{AC}$

For items 5 to 7, use the figure below.



_____ 49. Which of the following properties justifies the statement " $\overline{BD} \cong \overline{BD}$ "?

- A. Equivalence C. Symmetric
 B. Reflexive D. Transitive

_____ 50. Which of the following properties justifies the statement "If $\overline{AD} \cong \overline{DC}$ and $\overline{DC} \cong \overline{FG}$, then $\overline{AC} \cong \overline{FG}$ "?

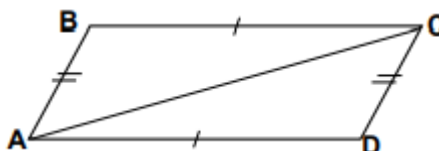
- A. Equivalence C. Symmetric
 B. Reflexive D. Transitive

_____ 51. If $\overline{AB} \cong \overline{FG}$, which angles are guaranteed congruent by the Isosceles Triangle Theorem?

- A. $\angle ABD$ and $\angle CBD$ C. $\angle EFG$ and $\angle BDC$
 B. $\angle BAD$ and $\angle BCD$ D. $\angle FEG$ and $\angle EGF$

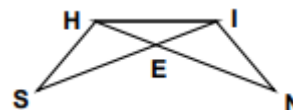
_____ 52. In the figure, $\triangle CBA \cong \triangle ADC$. Which of the following can justify the statement $\angle B \cong \angle D$?

- A. CPCTC
 B. Reflexive Property
 C. Definition of Midpoint
 D. Isosceles Triangle Theorem



_____ 53. The figure at the right are overlapping triangles where $\angle SIH \cong \angle NHI$ and $\overline{SI} \cong \overline{NH}$. Which of the following relations is true?

- A. $\triangle SHI \cong \triangle HIN$ C. $\triangle SHI \cong \triangle NHI$
 B. $\triangle SHI \cong \triangle HNI$ D. $\triangle SHI \cong \triangle NIH$



_____ 54. In $\triangle GEM$, let $\overline{ES}$ be a perpendicular bisector of $\overline{GM}$. If $\triangle GES \cong \triangle MES$, which side of the triangles is congruent by CPCTC?

- A. $\overline{ES} \cong \overline{EM}$ C. $\overline{GS} \cong \overline{ES}$
 B. $\overline{ES} \cong \overline{ES}$ D. $\overline{GE} \cong \overline{ME}$

_____ 55. Which of the following is true about an angle bisector?

- A. It divides an angle into halves.
 B. It divides an angle at 45° .
 C. It divides an angle at 90° .
 D. It divides an angle into three parts.

- ____ 56 What do you call the segments or lines that intersect forming a 90-degree angle?
- A. angle bisector C. skew segments/lines
B. auxiliary lines D. perpendicular segments/lines

For items 57 – 60, use the figure at the right to answer the questions that follow.

- ____ 57 Which among the following theorems of triangle congruence can be used to prove that $\triangle HEP \cong \triangle HOP$?

A. AAS B. HyA C. LA D. LL

- ____ 58 What is the corresponding side of $\overline{OP}$?

A. $\overline{EH}$ B. $\overline{EP}$ C. $\overline{HO}$ D. $\overline{HP}$

- ____ 59 Which of the following is true about $\overline{PH}$?

A. $\overline{PH}$ bisects $\angle EOP$ C. $\overline{PH}$ bisects $\angle PEO$
B. $\overline{PH}$ bisects $\angle EPO$ D. $\overline{PH}$ bisects $\angle POE$

- ____ 60 Which of the following reasons justifies $\overline{PH} \cong \overline{PH}$?

A. Definition of congruent segments
B. Definition of Perpendicular
C. Reflexive Property
D. Congruent Parts of Congruent Triangles are Congruent

