

Name: _____

Date: _____ Period: _____

Review and Congruent Triangles Exam

Mr Woods

Review and Congruent Triangles

Part I: Multiple Choice. Answer all questions in this section. Circle your answer.

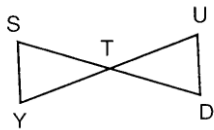
1. If two sides of a scalene triangle measure 12 and 14, the length of the third side could be:

- (1) 12 (2) 2 (3) 20 (4) 26

2. One method that **cannot** be used to prove two triangles congruent is

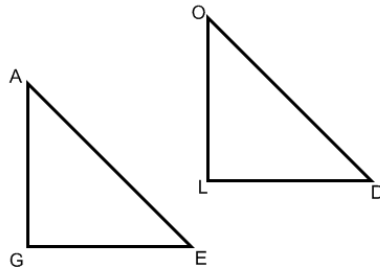
- (1) AAS (2) SSA (3) SAS (4) HL

3. In the accompanying diagram T is the midpoint of SD and YU. What method can be used to prove $\triangle STY \cong \triangle DTU$?



- (1) AAS (2) SSA (3) AAS (4) SAS

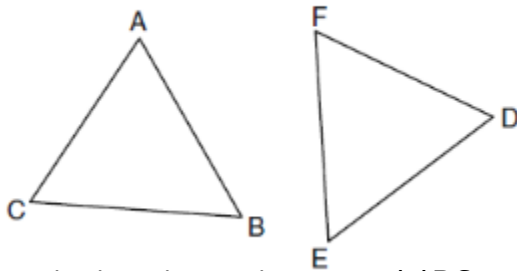
5. In the diagram below of $\triangle AGE$ and $\triangle OLD$, $\angle AGE$ and $\angle OLD$ are right angles, $\overline{GE} \cong \overline{LD}$.



To prove that $\triangle AGE$ and $\triangle OLD$ are congruent by HL, what other information is needed?

- (1) $\overline{AG} \cong \overline{OL}$ (2) $\angle GAE \cong \angle LOD$ (3) $\overline{AE} \cong \overline{OD}$ (4) $\angle GEA \cong \angle LDO$

6. In the diagram below of $\triangle ABC$ and $\triangle DEF$ below, $\overline{AB} \cong \overline{DE}$, $\angle A \cong \angle D$, and $\angle B \cong \angle E$.



Which method can be used to prove $\triangle ABC \cong \triangle DEF$?

(1) SSS

(2) SAS

(3) ASA

(4) HL

7. In $\triangle ABC$, $\overline{AB} \cong \overline{AC}$. The measure of $\angle B$ is 40° . What is the measure $\angle A$?

(1) 40°

(2) 50°

(3) 70°

(4) 100°

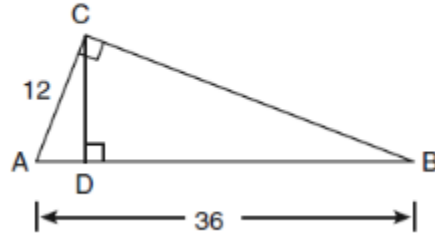
8. In the diagram below of right triangle ACB , altitude CD is drawn to hypotenuse AB . If $AB = 36$ and $AC = 12$, what is the length of AD ?

(1) 6

(3) 32

(2) 4

(4) 3



10. What is the point of concurrency of the three altitudes of a triangle?

(1) orthocenter

(2) incenter

(3) centroid

(4) circumcenter

11. In triangle ABC , $m\angle A = x$, $m\angle B = 2x + 2$, and $m\angle C = 3x + 4$. What is the value of x ?

(1) 29

(2) 31

(3) 59

(4) 61

12. Which is true about the angle bisectors of all three angles of any triangle?

(1) They do not intersect.

(3) They intersect in two points.

(2) They intersect in a single point.

(4) They intersect in three points.

14. What is the length of a diagonal of a square whose side is 8?

(1) $\sqrt{2}$

(2) $2\sqrt{2}$

(3) $4\sqrt{2}$

(4) $8\sqrt{2}$

15. In a 30-60-90 right triangle, if the side opposite the 30 degree angle is equal to 20, what is the length of the hypotenuse?

(1) $\sqrt{3}$

(2) 10

(3) 40

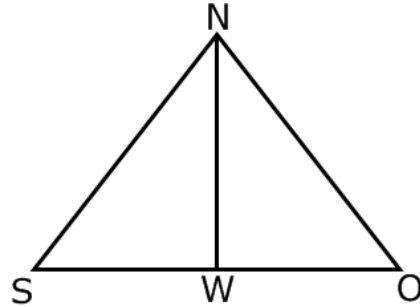
(4) $20\sqrt{3}$

Type equation here.Part II: Free-Response. Answer **all** of the proofs in this section using the formal statement-reason column method. Make sure you mark up your diagrams and use **all** of the givens.

16. Given: NW bisects $\angle SNO$

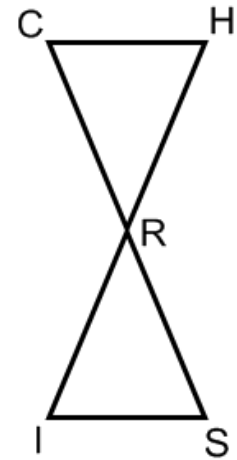
$$\overline{SN} \cong \overline{ON}$$

Prove: $\triangle SNW \cong \triangle ONW$



17. Given: R is the midpoint of CS and IH

Prove: $\triangle CHR \cong \triangle SRI$



18) **Given:** M is the midpoint of AB

$$AC \cong MD$$

$$CM \cong DB$$

Prove: $\triangle ACM \cong \triangle MDB$

