Name:_____ Date:_____ Period:_____ Score:_____

Unit 8 Review - Triangles and Quadrilaterals

1. Draw $\triangle RUN$ with RU = 6cm, $m\angle R = 120°$, and m$\angle U = 20°$.

2. Draw $\triangle SAD$ with SD = 5cm, m$\angle A = 55°$, and m$\angle S = 30°$.

> Challenges are what makes life interesting.
> Overcoming them is what makes life meaningful.
> Joshua J. Marine

3. Draw a triangle with side lengths 4 cm, 5 cm, and 8 cm.

4. a) List the 3-letter theorems that prove congruence:

   b) List the 3-letter theorems that show similarity:

   c) List the 3-letter theorems that don't force congruence:

For problems 5 - 7 make a sketch and determine if the given information would force congruent triangles. If so give the triangle congruence theorem. If not explain why not.

5. ΔCUB with CU= 10 cm, UB= 12 cm and m $\angle B = 35°$

6. ΔBAT with BA= 25 cm, $m < A = 43°$, and $m < T = 106°$

7. ΔCOT with CO= 15 cm, OT=12 cm and m $\angle O = 95°$

Complete each congruence statement.

8.

$\overline{DE} \cong$ _____ $\overline{IJ} \cong$ _____

$\angle E \cong$ _____ $\angle K \cong$ _____

$\Delta FED \cong \Delta$ _____
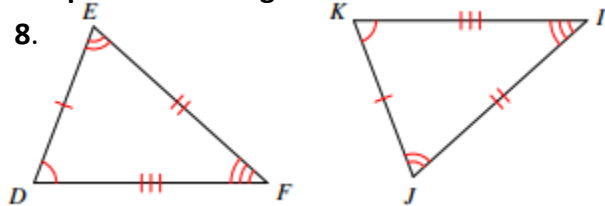
Use the triangle congruence statement to complete the given information.

9. $\Delta SAD \cong \Delta CAT$

$\overline{SD} \cong$ _____ $\overline{AC} \cong$ _____ $\angle S \cong$ _____ $\angle T \cong$ _____
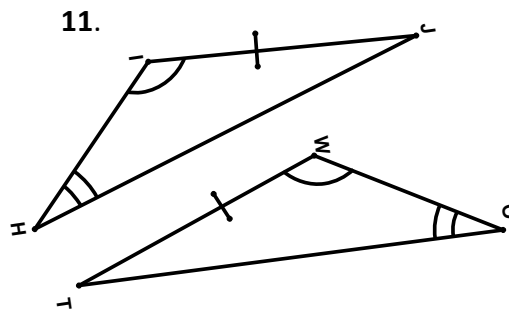
For problems 10 - 17, determine if the triangles are congruent. If they are congruent *state the triangle congruence theorem* (SSS, SAS, ASA, SAA are the only ones that force congruence) and *complete the triangle congruence statement*. If they are not congruent, *explain why not.* (AAA and SSA don't force congruence)
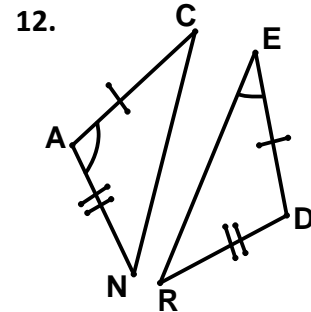
10.
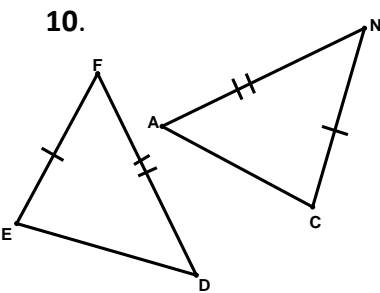
Congruent: (yes/no)

Triangle congruence theorem:

If yes, $\Delta DEF = \Delta$ _____

11.

Congruent: (yes/no)

Triangle congruence theorem:

If yes, $\Delta HIJ = \Delta$ _____

12.

Congruent: (yes/no)

Triangle congruence theorem:

If yes, $\Delta CAN = \Delta$ _____

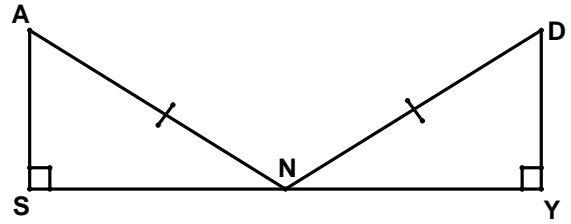**13.** **Given:** $\overline{TX}$ and $\overline{UW}$ bisect each other.
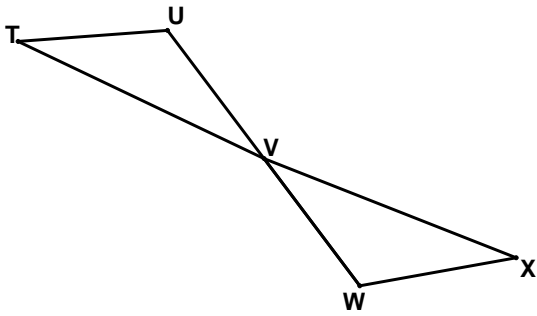
Congruent: (yes/no)

Triangle congruence Theorem: _____

If yes, $\Delta TUV = \Delta$ _____

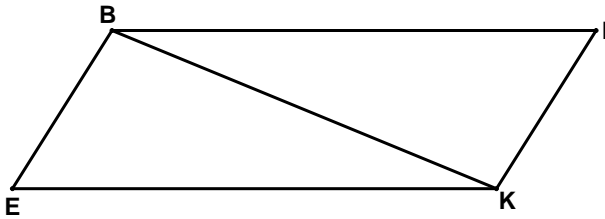**14.** **Given:** N is the midpoint of $\overline{SY}$

Congruent (yes/no):

Triangle congruence Theorem: _____

If yes, $\Delta SAN = \Delta$ _____

15. **Given:** $\overline{BE} \;||\; \overline{IK}$ and $\overline{BI} \;||\; \overline{EK}$
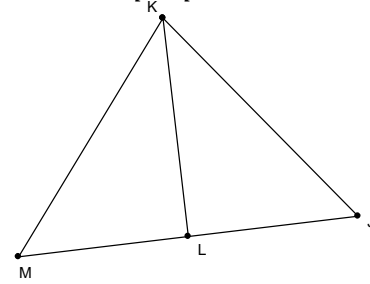
Congruent: (yes/no)

Triangle congruence Theorem: _____

If yes, $\Delta BEK = \Delta$ _____

16. **Given:**
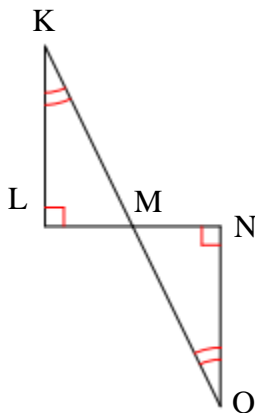$\overline{KL}$ is the perpendicular bisector of $\overline{MJ}$.

Congruent: (yes/no)

Triangle congruence Theorem: _____

If yes, $\Delta KLM = \Delta$ _____

17.

Congruent: (yes/no)
Triangle congruence Theorem: _____
If yes, $\Delta KLM = \Delta$ _____

18. Quadrilateral RSTU with vertices: R(-4,1), S(-2,3), T(1,1), U(-2,-1) has the following properties:

- $RS = \sqrt{8}$
- $ST = \sqrt{13}$
- $TU = \sqrt{13}$
- $RU = \sqrt{8}$
- $RT = 5$
- $SU = 4$

- *Midpoint of* $\overline{RT}$: $(-1.5, 1)$
- *Midpoint of* $\overline{SU}$: $(-2, 1)$
- *Slope of* $\overline{RT}$: $\frac{0}{5}$
- *Slope of* $\overline{SU}$: $\frac{-4}{0}$

- *Slope of* $\overline{RS}$: $\frac{2}{2}$
- *Slope of* $\overline{ST}$: $\frac{-2}{3}$
- *Slope of* $\overline{TU}$: $\frac{-2}{-3}$
- *Slope of* $\overline{RU}$: $\frac{-2}{2}$

Classify quadrilateral RSTU:

In problems 19-21, classify the given quadrilaterals. Make a rough sketch, then show ALL the work leading up to your conclusion.

19. Quadrilateral COWS with the following vertices: C(-4,2), O(-1,4), W(2,2), S(-1,-1).

20. Quadrilateral ABCD with the following vertices: A(-4,1), B(2,4), C(8,1), and D(2,-2).

21. Quadrilateral WXYZ with the following vertices: W(-5,1), X(-1, 4), Y(1,1), Z(-3,-2).

Classify each quadrilateral based on the markings *only*.

22. _____   **23**. _____   **24**. _____   **25**. _____   **26**. _____   **27**. _____