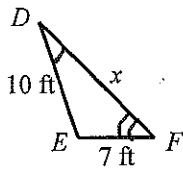
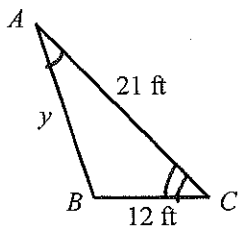


Advanced Geometry Congruence & Similarity Unit Test Review

Name: KEY

Period: _____

1. Given that $m\angle A \cong m\angle D$ and $m\angle C \cong m\angle F$, find x and y . Round your answer to the nearest hundredth.



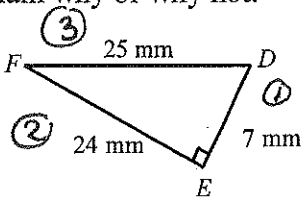
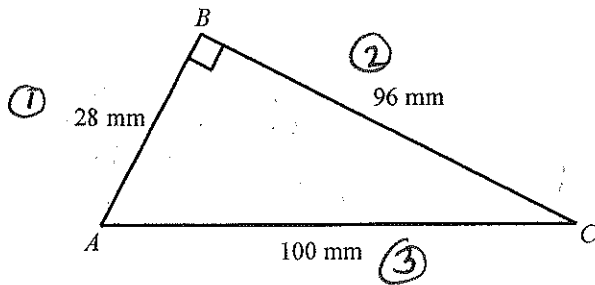
$$\frac{y}{10} = \frac{12}{7}$$

$$y = 17.14$$

$$\frac{12}{7} = \frac{21}{x}$$

$$x = 12.25$$

2. Are $\triangle ABC$ and $\triangle FDE$ similar? Explain why or why not.



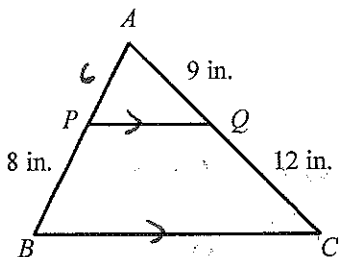
yes
scale factor is the same
($ABC \sim DEF$)
not for $\triangle ABC, \triangle FDE$

$$\frac{28}{7} = \textcircled{4}$$

$$\frac{96}{24} = \textcircled{4}$$

$$\frac{100}{25} = \textcircled{4}$$

3. $\overline{PQ} \parallel \overline{BC}$, find the length of \overline{AB} .

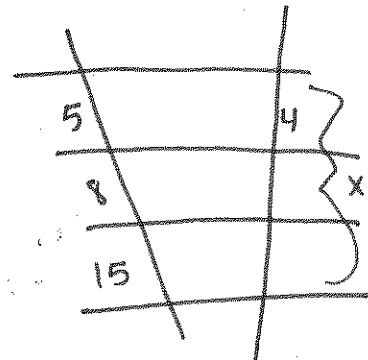


$$\frac{x}{8} = \frac{9}{12}$$

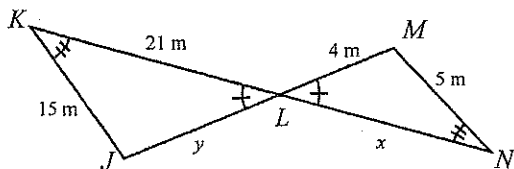
$$12x = 72$$

$$x = 6$$

$$AB = 14 \text{ in}$$



4. Find x and y .



$$\frac{21}{x} = \frac{15}{5}$$

$$x = 7$$

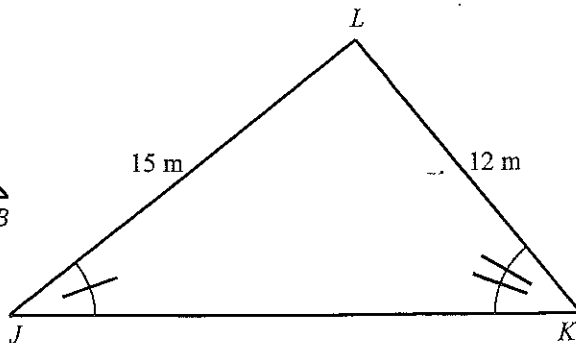
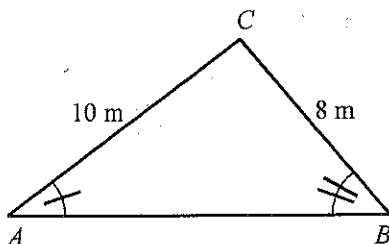
$$\frac{15}{5} = \frac{y}{4}$$

$$y = 12$$

$$\frac{5}{4} = \frac{28}{x}$$

$$x = 22.4$$

5. $\triangle ABC$ and $\triangle JKL$ are similar. Find the ratio of their corresponding sides.



$$\frac{10}{15}$$

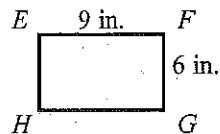
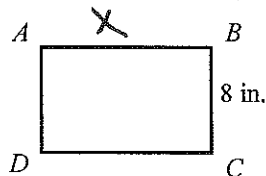
$$\frac{8}{12}$$

$$\textcircled{\frac{2}{3}}$$

Advanced Geometry Congruence & Similarity Unit Test Review

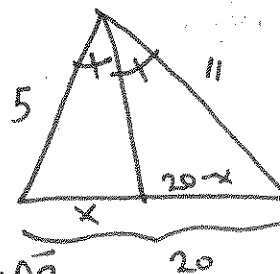
6. $ABCD \sim EFGH$

What is the length of \overline{AB} ?



$$\frac{8}{6} = \frac{x}{9}$$

$x = 12 = \overline{AB}$



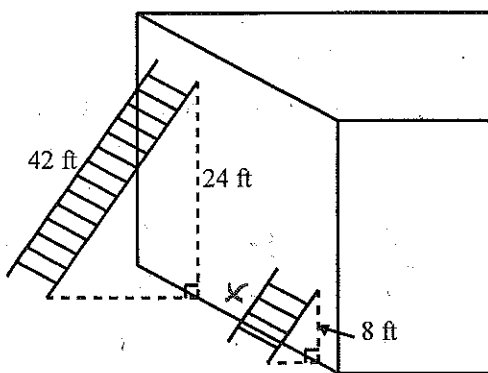
$$\frac{5}{11} = \frac{x}{20-x}$$

$$100 - 5x = 11x$$

$$100 = 16x$$

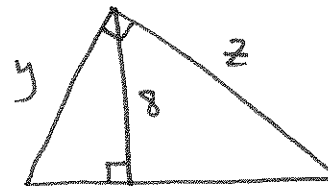
$$x = 6.25$$

7. Two ladders are leaning against a wall at the same angle as shown. How long is the shorter ladder?



$$\frac{42}{x} = \frac{24}{8}$$

$x = 14$



$$\frac{8}{4} = \frac{x}{8}$$

$$64 = 4x$$

$$x = 16$$

$$x = 16$$

$$\frac{4}{8} = \frac{y}{20}$$

$$y = 10$$

$$y = 4\sqrt{5}$$

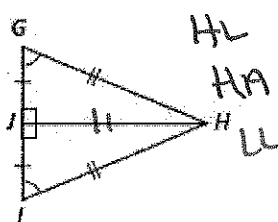
$$\frac{16}{8} = \frac{z}{20}$$

$$z^2 = 320$$

$$z = 8\sqrt{5}$$

8. State whether the pairs of figures are congruent. Justify your answer.

$\triangle GHJ$ and $\triangle IHI$

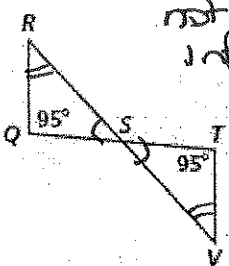


yes

HL
HA
LL

9. State whether the pairs of figures are congruent. Justify your answer.

$\triangle QRS$ and $\triangle TVS$



not enough information

10. Given: $\triangle ABC \cong \triangle MNO$, $AC = 4(x + 3)$ and $MO = 7x - 6$. Find the value of x .

$$4x + 12 = 7x - 6$$

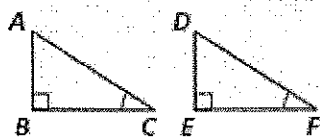
$$18 = 3x$$

$x = 6$

What else must you know to prove the triangles are congruent for the reason shown?

11.

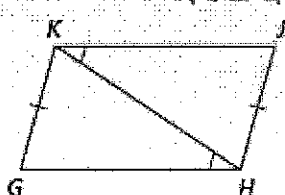
ASA



$BC \cong EF$

12.

AAS



$\angle GKH \cong \angle JHK$
OR $\angle G \cong \angle J$

13.

ASA



$\angle L \cong \angle Q$

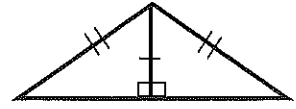
Advanced Geometry Congruence & Similarity Unit Test Review

In questions 14-17, state the theorem, if any, should be used to show that the triangles are congruent.

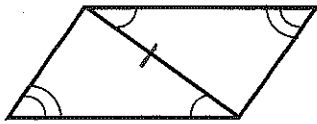
14. ASA



15. HL

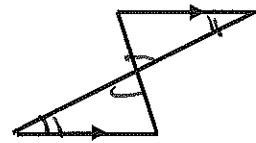


16. AAS



17. _____

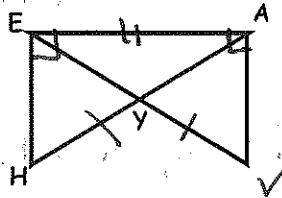
not enough information



Complete each congruence statement. Mark all information on the triangle. Postulates are SSS, SAS, AAS, ASA, HL, HA, LL or LA. If it not possible, write none.

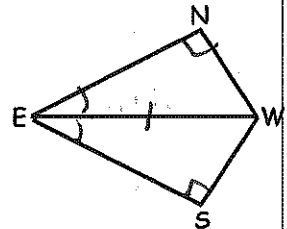
18. $\triangle HEA \cong \triangle VAE$ by HL

$\overline{EA} \perp \overline{HE}$
 $\overline{EA} \perp \overline{AV}$
 $\overline{HA} \cong \overline{VE}$



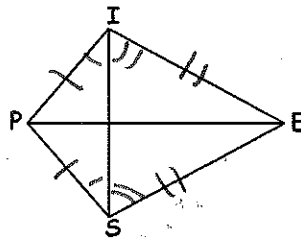
19. $\triangle NEW \cong \triangle SEW$ by HA

$\overline{NW} \perp \overline{NE}$
 $\overline{SW} \perp \overline{SE}$
 \overline{EW} bisects $\angle NES$



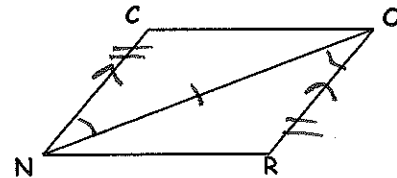
20. $\triangle PIE \cong \triangle PSE$ by SSS OR SAS

$\triangle SPI$ is isosceles with base \overline{IS} .
 $\triangle IES$ is isosceles with base \overline{IS} .



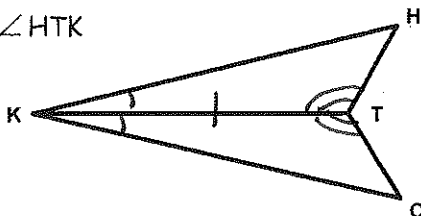
21. $\triangle NCO \cong \triangle DRN$ by SAS

$\overline{NC} \parallel \overline{RO}$
 $\overline{NC} \cong \overline{RO}$



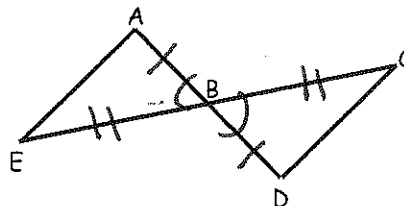
22. $\triangle HTK \cong \triangle CTK$ by ASA

TK bisects $\angle HKC$
 $\angle CTK \cong \angle HTK$



23. $\triangle ABE \cong \triangle DBC$ by SAS

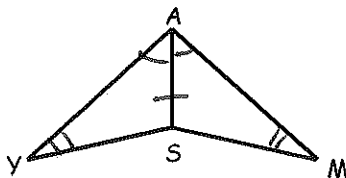
B is the midpoint of \overline{AD} and \overline{EC}



Advanced Geometry Congruence & Similarity Unit Test Review

24. $\triangle YAS \cong \triangle MAS$ by AAS

\overline{AS} bisects $\angle YAM$ and $\angle Y \cong \angle M$

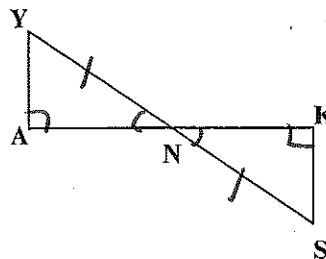


25. $\triangle ANY \cong \triangle KNS$ by HA

$\overline{YA} \perp \overline{AK}$

$\overline{SK} \perp \overline{KA}$

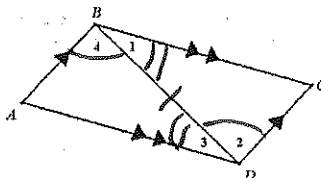
N is the midpoint of \overline{YS}



26. Given:

$\overline{AB} \parallel \overline{DC}$; $\overline{BC} \parallel \overline{AD}$

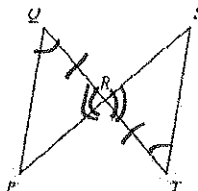
Prove: $\triangle ABD \cong \triangle CDB$



Statements	Reason
1. $\overline{AB} \parallel \overline{DC}$	1. Given
2. $\angle 1 \cong \angle 3$	2. If lines are parallel, <u>alt. int. \angles \cong</u>
3. $\overline{BC} \parallel \overline{AD}$	3. Given
4. $\angle 2 \cong \angle 4$	4. If lines \parallel , <u>alt. int. \angles \cong</u>
5. $\overline{BD} \cong \overline{BD}$	4. Reflexive Prop.
6. $\triangle ABD \cong \triangle CDB$	6. <u>ASA</u>

27. Given: $\angle Q \cong \angle T$ and $\overline{QR} \cong \overline{TR}$

Prove: $\overline{PR} \cong \overline{SR}$



Statements	Reason
1. $\angle Q \cong \angle T$ and $\overline{QR} \cong \overline{TR}$	1. Given
2. $\angle QRP \cong \angle SRT$	2. Vertical Angles are \cong
3. $\triangle PRQ \cong \triangle SRT$	3. <u>ASA</u>
4. $\overline{PR} \cong \overline{SR}$	4. <u>CPOCT</u>

* Re-work or look over any notes, home work, daily work, and quizzes for this unit to help you prepare for the test.