

Unit 6 Study Guide

Parallel Lines and Transversals

1. Use the diagram below to find the missing measurements if $m\angle 2 = 135$ degrees. Show all work and explain your reasoning by stating the angle relationship you used to find the angle measure.

$m\angle 1 =$ _____ because $\angle 2$ and $\angle 1$ are _____ angles

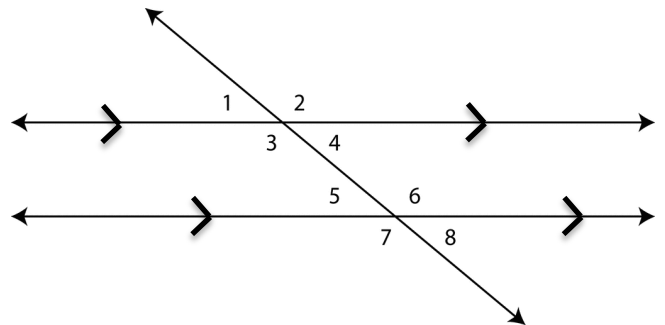
$m\angle 3 =$ _____ because $\angle 2$ and $\angle 3$ are _____ angles

$m\angle 6 =$ _____

$\angle 2$ and $\angle 6$ are _____ angles

$m\angle 7 =$ _____

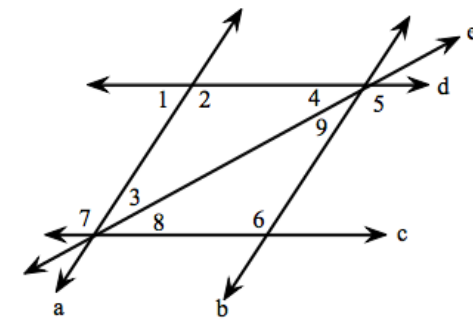
$\angle 2$ and $\angle 7$ are _____ angles



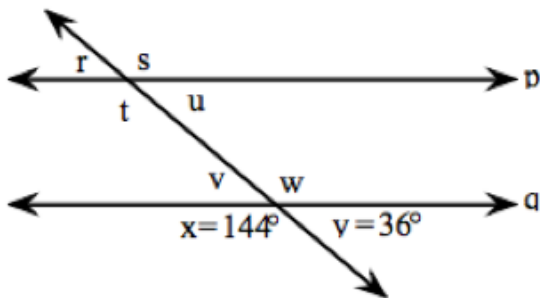
2. Which of the following is a pair of corresponding angles?

- A. $\angle 2$ and $\angle 5$
- B. $\angle 1$ and $\angle 7$

- C. $\angle 6$ and $\angle 8$
- D. $\angle 2$ and $\angle 3$

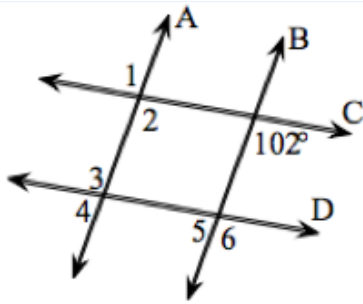


3. Find the measure of $\angle t$ given that $p \parallel q$.



$m\angle t =$ _____ $^\circ$

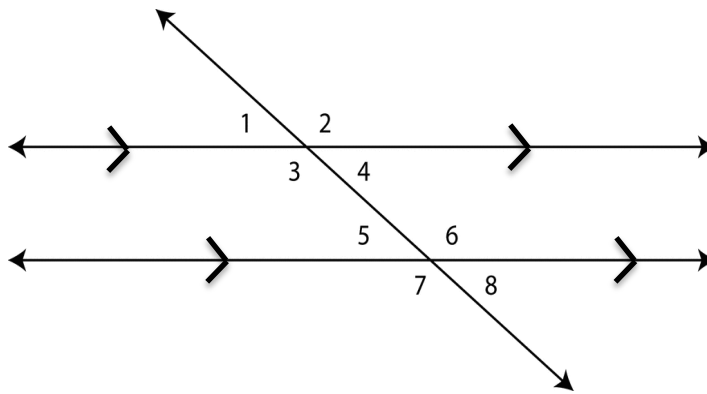
4. In a certain city, four streets intersect as shown. Street A and Street B are parallel, and Street C and Street D are parallel. If the measure of an angle formed by Street B and Street C is as shown, what is $m\angle 4$?



(This figure is not to scale.)

$m\angle 4 = \underline{\hspace{2cm}}^\circ$

5. Determine whether each statement is true or false. Explain your reasoning for **each** answer. If false, correct the statement so it is true.

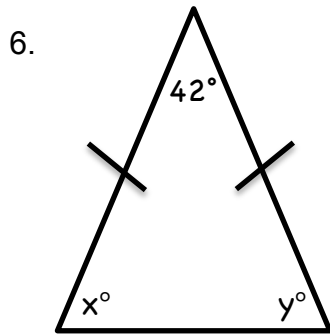


Statement	True	False	Explanation/Correction
Angle 2 and angle 4 are vertical angles.			
If $m\angle 2 = 120^\circ$, then $m\angle 6 = 120^\circ$.			
$m\angle 5 + m\angle 3 = 180^\circ$.			
Angle 1 and angle 7 are alternate exterior angles.			
Angle 3 and angle 6 are alternate interior angles.			
Angles 3 and 7 are congruent angles.			

Angles of a Triangle

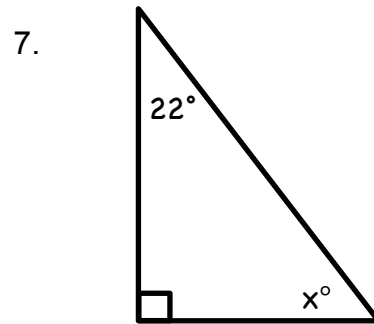
NOTE: Figures are not drawn to scale.

Classify each triangle below and find the value of the missing angles.



Type: _____

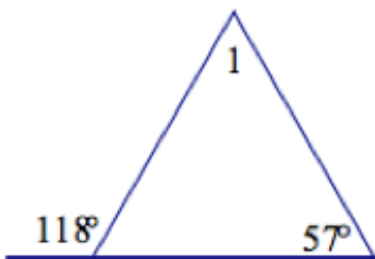
$x = \underline{\hspace{2cm}}^\circ$ $y = \underline{\hspace{2cm}}^\circ$



Type: _____

$x = \underline{\hspace{2cm}}^\circ$

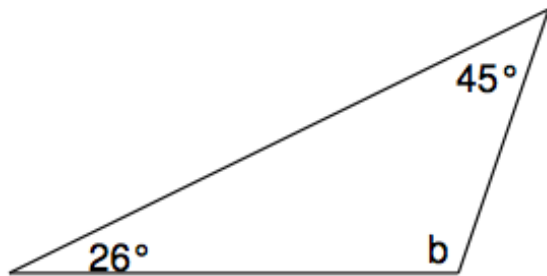
8. For the figure shown, find $m\angle 1$.



(The figure is not drawn to scale.)

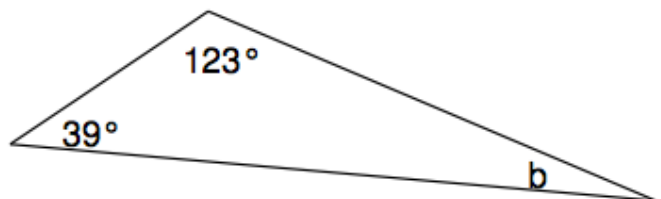
$m\angle 1 = \underline{\hspace{2cm}}^\circ$ (Property: _____)

9. Find the $m\angle b$ in the figures below. SHOW YOUR WORK!



$m\angle b = \underline{\hspace{2cm}}^\circ$

Property: _____



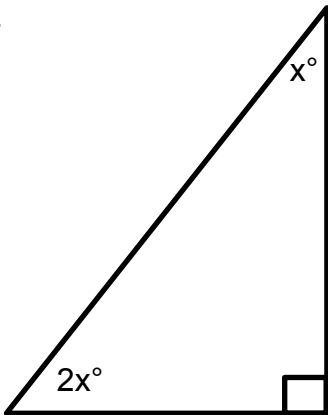
$m\angle b = \underline{\hspace{2cm}}^\circ$

Property: _____

Applying Algebra to Geometry

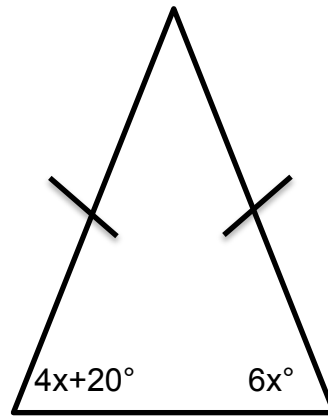
Use your knowledge of angle relationships to find the value for "x" in the diagrams below.

10.



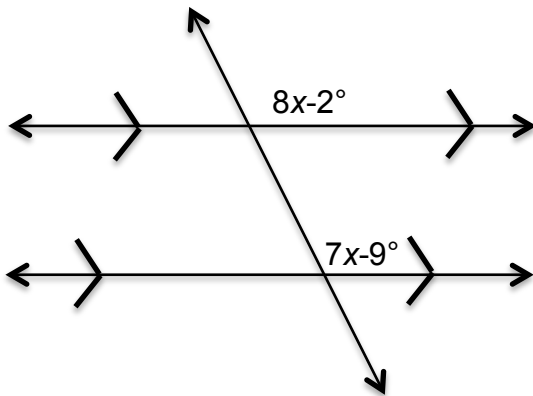
x = _____

11.



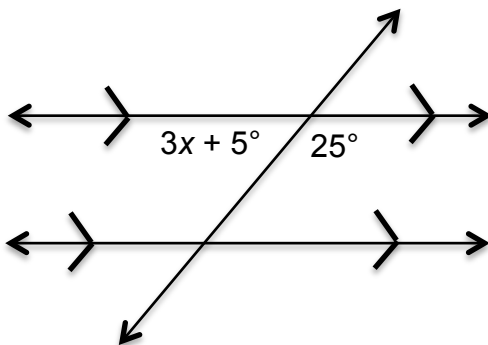
x = _____

12.



x = _____

13.



x = _____

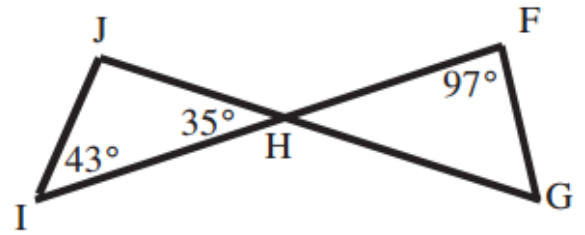
Triangle Similarity

Determine if the triangles below are similar (circle one) and explain your reasoning.

14. $\triangle JIH \sim \triangle FGH$

similar

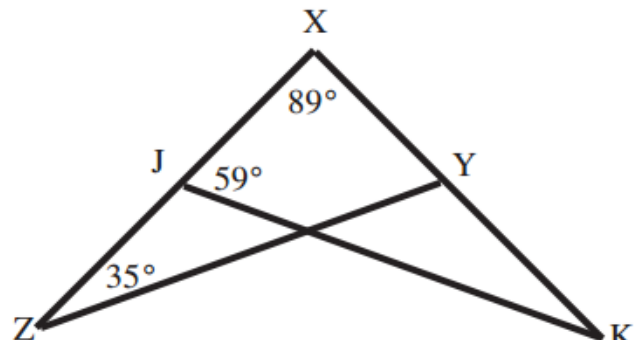
not similar



15. $\triangle XZY \sim \triangle XKJ$

similar

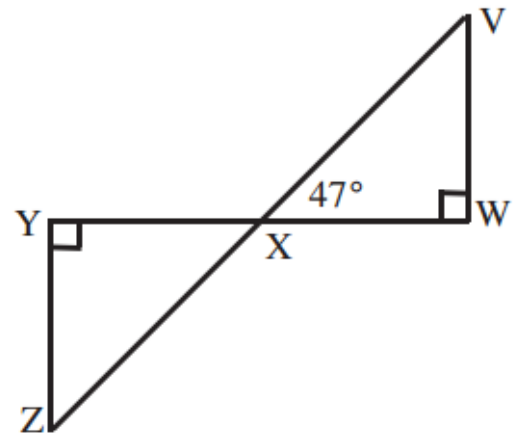
not similar



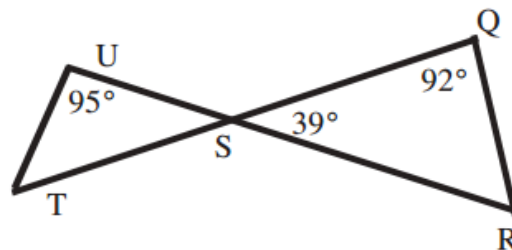
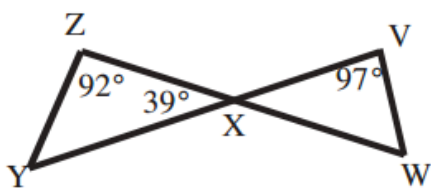
16. $\triangle XYZ \sim \triangle XWV$

similar

not similar



17. Which triangles are similar? Check all that apply. The figures are not drawn to scale.



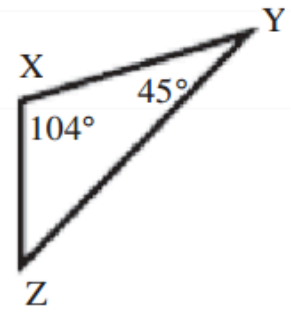
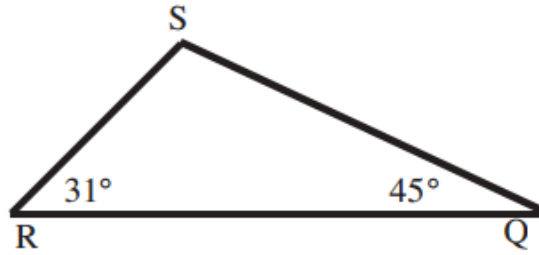
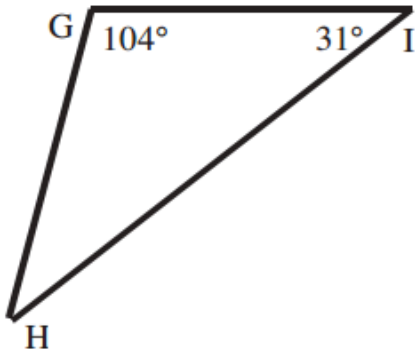
A. $\triangle QRS$

B. $\triangle ZYX$

C. $\triangle UTS$

D. $\triangle VWX$

18. Which triangles are similar? Check all that apply. The figures are not drawn to scale.



A. $\triangle XYZ \sim \triangle SRQ$

D. $\triangle GIH \sim \triangle SRQ$

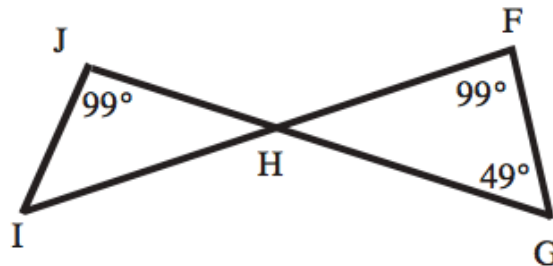
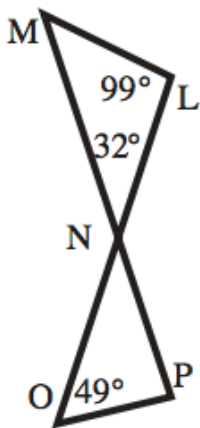
B. $\triangle XYZ \sim \triangle QSR$

E. $\triangle ZXY \sim \triangle GIH$

C. $\triangle XYZ \sim \triangle GHI$

F. $\triangle GHI \sim \triangle SRQ$

19. Which triangles are similar? Check all that apply. The figures are not drawn to scale.



A. $\triangle OPN$

C. $\triangle LNM$

E. $\triangle PON$

B. $\triangle JIH$

D. $\triangle FGH$

F. $\triangle LMN$