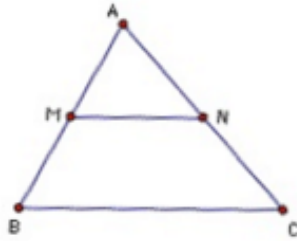


Target 1: Use the midsegment to determine unknown information within triangles

1) Find the value of x that makes $MN \parallel BC$.

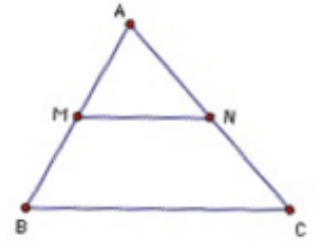
$MN = x + 1$
 $BC = 4x - 7$
 $AN = -2x + 13$
 $NC = -4x + 22$



$x =$ _____

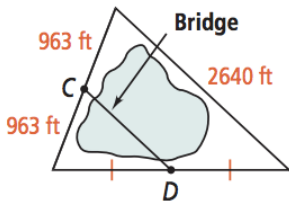
2) Find MN if M and N are midpoints.

$MN = 3x + 26$
 $BC = x + 22$



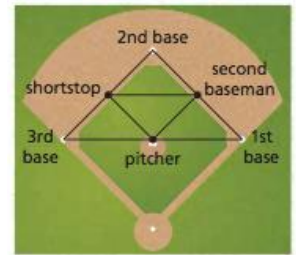
$MN =$ _____

3) \overline{CD} is a bridge built over a lake, as shown in the figure below. What is the length of the bridge?



Bridge Length: _____

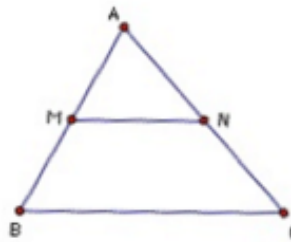
4) The distance between bases on a baseball field is 90 ft. A second baseman stands halfway between 1st and 2nd base and a shortstop stands halfway between 2nd and 3rd base, and the pitcher stands on the mound in the middle. Find the distance between the shortstop and the pitcher.



Distance: _____

5) Find the length of MB .

$MN = 11$
 $BC = 22$
 $AM = 9$
 $MB = ?$



$MB =$ _____

6) Points M and N are midpoints.

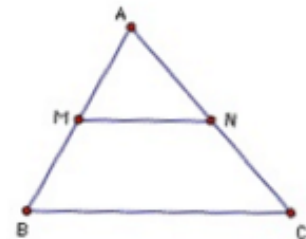
Select all statements that must be correct.

(A) $\frac{AM}{MB} = \frac{MN}{BC}$

(B) $\frac{AN}{AC} = \frac{AM}{AB}$

(C) $\frac{AM}{AB} = \frac{MN}{BC}$

(E) Cannot be determined



(D) $\frac{AN}{NC} = \frac{AM}{MB}$

7) $AM = 6, AN = 7, MN = 10, BC = 18$

Select all statements that must be correct.

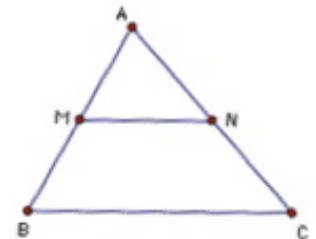
(A) $\frac{MN}{BC} = \frac{AN}{NC}$

(B) $\frac{MN}{BC} = \frac{AN}{AC}$

(C) $\frac{AN}{AC} = \frac{AM}{MB}$

(D) $\frac{BC}{MN} = \frac{CA}{CN}$

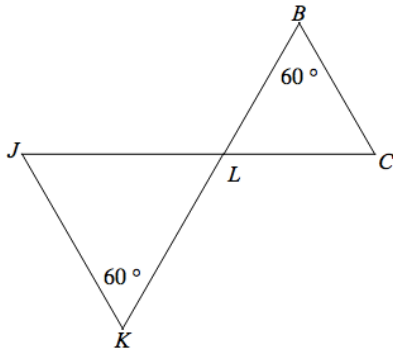
(E) Cannot be determined



Target 2: Prove and apply properties of similar triangles (AA~, SSS~, SAS~)

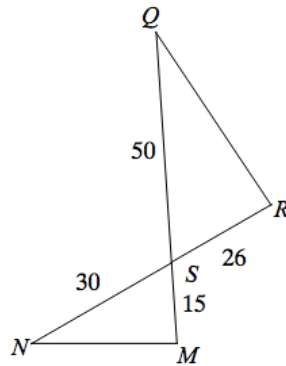
Directions: Based on the given diagram, determine if the triangles are similar. If yes, identify the theorem that can be used to prove they are similar. Select all that apply.

8)



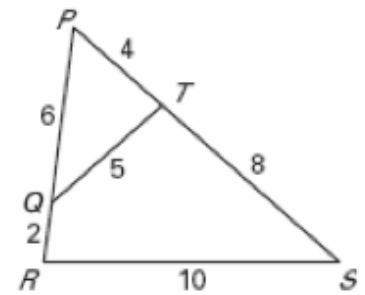
- (a) Yes (b) No (c) AA~
(d) SSS~ (e) SAS~

9)



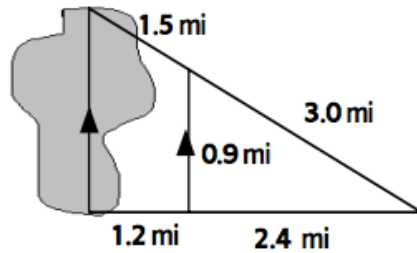
- (a) Yes (b) No (c) AA~
(d) SSS~ (e) SAS~

10)

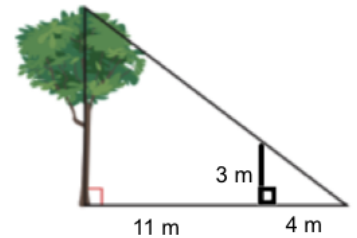


- (a) Yes (b) No (c) AA~
(d) SSS~ (e) SAS~

11) Find the distance across the lake.



12) A pole 3 meters tall casts a shadow 4 meters long. A nearby tree casts a shadow. John says he can solve for the height of the tree with $\frac{x}{3} = \frac{11}{4}$. Is he right?



13) In $\triangle JKL$ and $\triangle JUV$, $\angle K \cong \angle U$ and $\angle L \cong \angle V$. The length of side $LJ = 12$ and the length of side $VJ = 7$. If the length of side $UJ = 6$, what is the measure of side JK ?

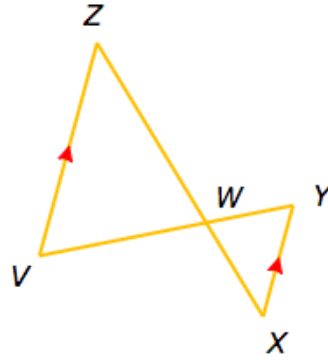
14) In $\triangle TVU$ and $\triangle HVG$, $\angle T \cong \angle H$ and $\angle U \cong \angle G$. The length of side $UV = 60$ and the length of side $GV = 10$. If the length of side $TV = 76$, what is the measure of side HV ?

15) In $\triangle HGF$ and $\triangle HKL$, $\angle K \cong \angle G$ and $\angle L \cong \angle F$. The length of side $HL = 8$ and the length of side $HF = 59$. If the length of side $KH = 12$, what is the measure of side KG ?

16) Complete the following similarity proof.

Given: $\overline{VZ} \parallel \overline{YX}$

Prove: $\triangle ZVW \sim \triangle XYW$



Statement	Reason
1.	1.
2.	2.
3.	3.
4.	4.

Geometry Unit 7 Review Answers

1. $x = 4.5$
2. $MN = 8.6$
3. Bridge length - 1320 ft
4. Distance - 45 ft
5. $MB = 9$
6. B, C, D
7. E
8. A, C
9. B
10. A, E
11. 1.35 mi
12. Set up wrong proportion
13. $JK = 10.28$
14. $HV = \frac{38}{3}$
15. $KG = 100.5$ or $KG = 78.5$ (depending on how you draw your similar triangles)

16.

Statement	Reason
1. $\overline{VZ} \parallel \overline{YX}$	1. Given
2. $\angle ZWV \cong \angle XWY$	2. Vertical Angles
3. $\angle Z \cong \angle X$ OR $\angle V \cong \angle Y$	3. Alternate Interior Angles
4. $\triangle ZVW \sim \triangle XYW$	4. Angle Angle