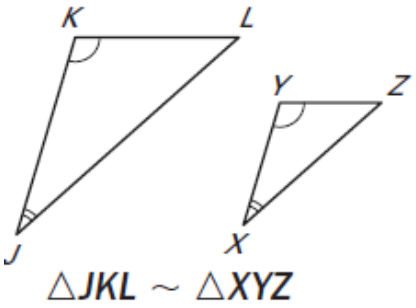
Geometry A
6.4 Notes : AA~ Basics

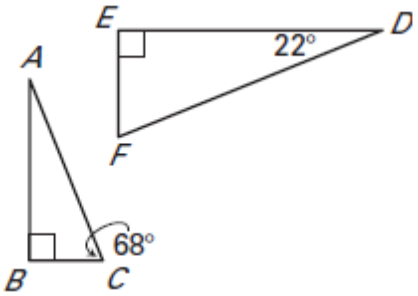
Name: _____
Date: _____ Period: _____

- I can determine if triangles are similar using AA~
- I can use AA~ to set up and solve proportions.

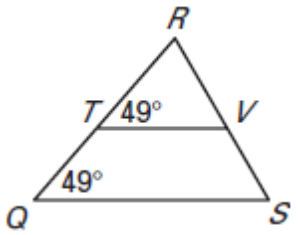
Angle-Angle Similarity (AA~)	If two angles of one triangle are congruent to two angles of a second triangle, then the triangles are similar.	 $\triangle JKL \sim \triangle XYZ$

Example 1 : Determine if the following triangles are similar by AA~. If they are, write a similarity statement. If they are not, explain.

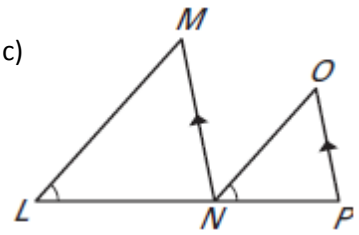
a)



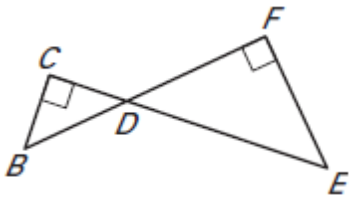
b)



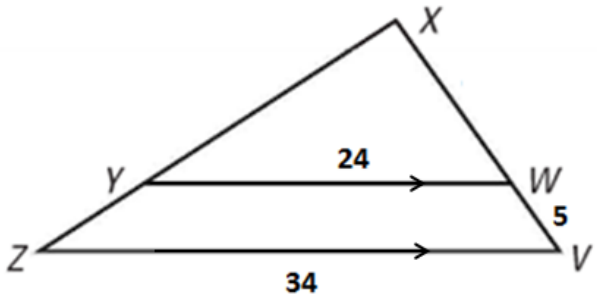
c)



d)

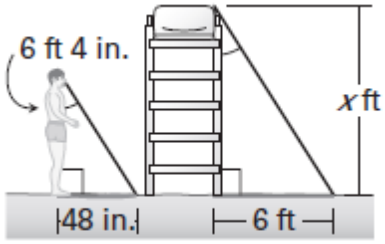


Example 2 : Given that $\overline{YW} \parallel \overline{ZV}$ and $\frac{XW}{XV} = \frac{YW}{ZV}$, please solve for XW.

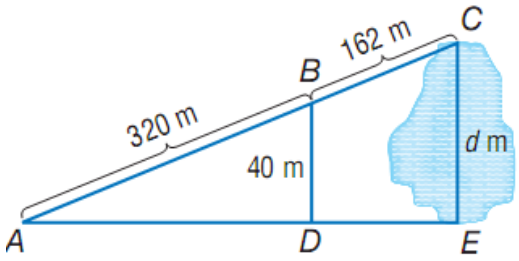


Applications of AA ~

Example 3 : A lifeguard is standing beside the lifeguard chair on a beach. The lifeguard is 6 feet 4 inches tall and casts a shadow that is 48 inches long. The chair casts a shadow that is 6 feet long. How tall is the chair?



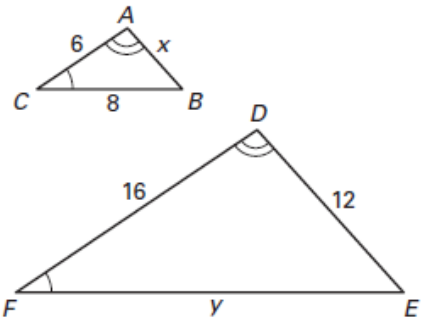
Example 4 : In the figure, $\overline{BD} \parallel \overline{CE}$. Ramon wants to know the distance across the lake.



Geometry A
6.4 Homework : AA~ Basics

Name: _____
Date: _____ Period: _____

Use the diagram to compete the statements below for #1 – 6.



1. $\Delta ABC:\ \Delta$ _____

2. $\frac{AB}{?}=\frac{?}{EF}=\frac{CA}{?}$

3. $\angle B \cong \angle$ _____

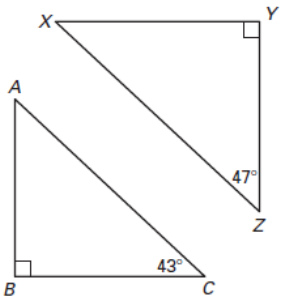
4. $\frac{?}{12}=\frac{8}{?}$

5. $x=$ _____

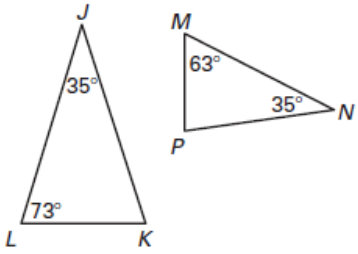
6. $y=$ _____

Determine whether the triangles are similar. If they are, write a similarity statement.

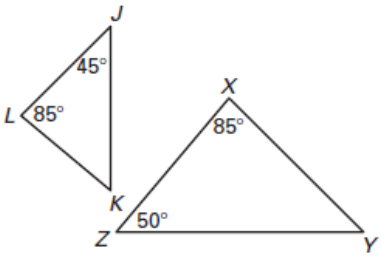
7.



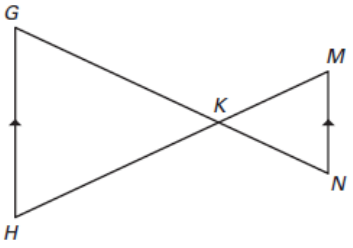
8.



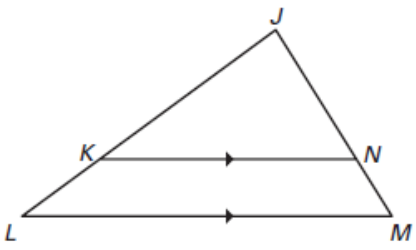
9.



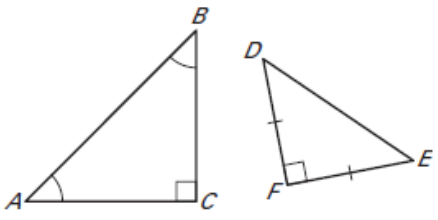
10.



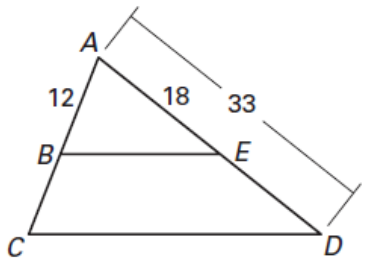
11.



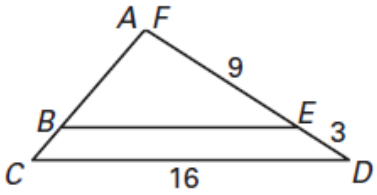
12.



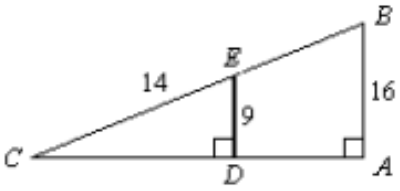
13. Given $\frac{AB}{BC} = \frac{AE}{ED}$, find BC.



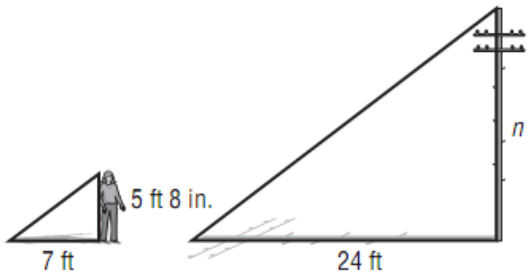
14. Given $\frac{FD}{FE} = \frac{CD}{BE}$, find BE.



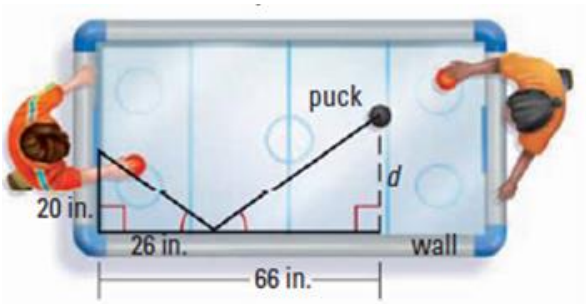
15. Given that $\frac{ED}{BA} = \frac{EC}{BC}$, find *BE.* Round to the nearest tenth.



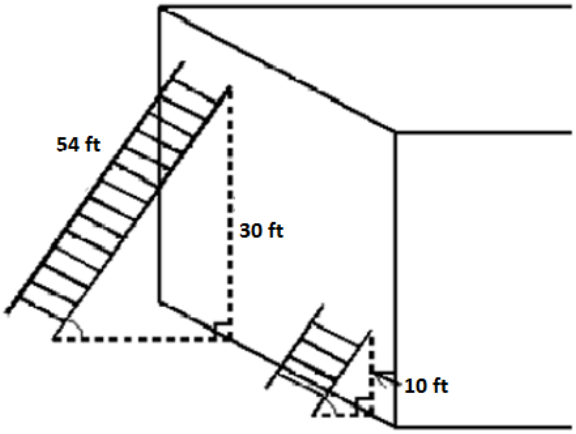
16. A telephone pole casts a 24-foot shadow. Belinda, who is 5 feet 8 inches tall, casts a 7-foot shadow. What is the height of the telephone in feet and inches to the nearest inch?



17. An air hockey player returns the puck to his opponent by bouncing the puck off the wall of the table as shown. From physics, the angles that the path of the puck makes with the wall are congruent. What is the distance *d* between the puck and the wall when the opponent returns it? Round to the nearest tenth.



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



Answer Key : 1) *DEF* 2) *DE*, *BC*, *FD* 3) *E* 4) x, y 5) 4.5 6) 21.3 7) $\Delta ABC \sim \Delta ZYX$

8) Not Similar 9) $\Delta JLK \sim \Delta XYZ$ 10) $\Delta KGH \sim \Delta KNM$ 11) $\Delta JNK \sim \Delta JML$

12) $\Delta ABC \sim \Delta EDF$ 13) 10 14) 12 15) 10.9 16) 19 ft 5 inches 17) 30.8 in 18) 18 ft