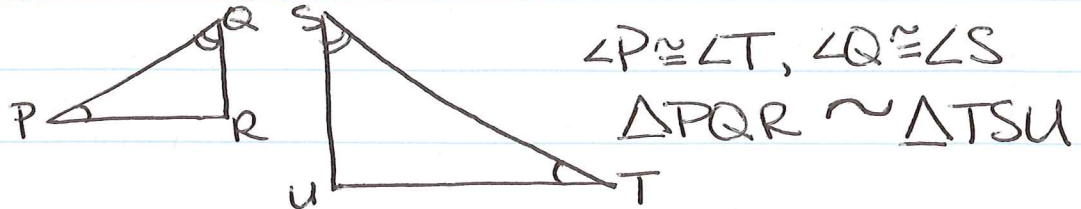
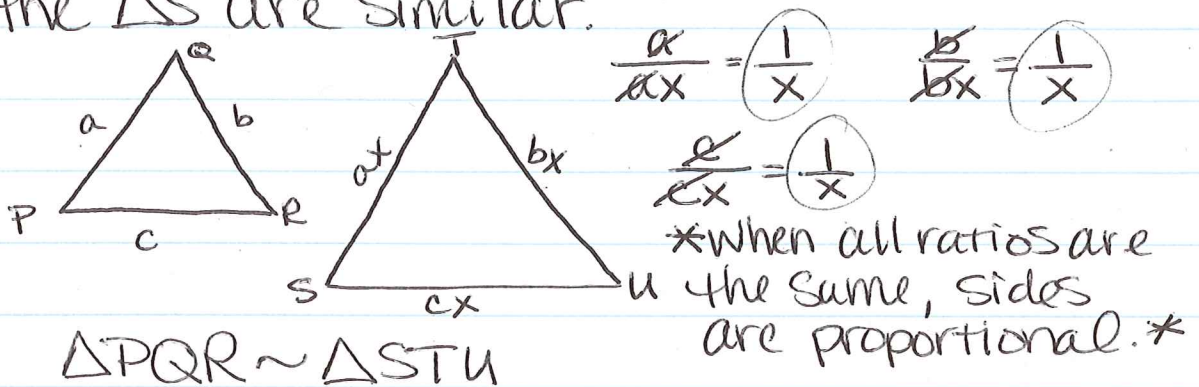


7-3 Similar Δ s

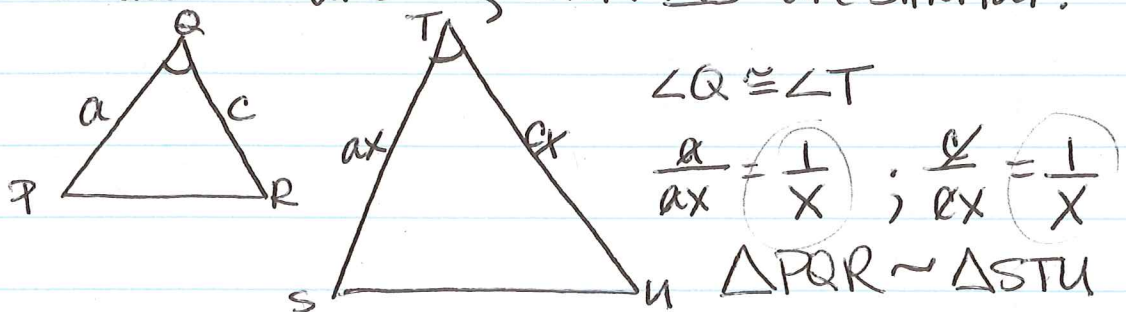
AA \sim If two ~~angles~~ \angle s of one Δ are \cong to two \angle s of a second Δ , then the Δ s are similar.



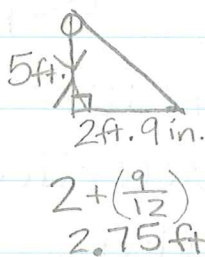
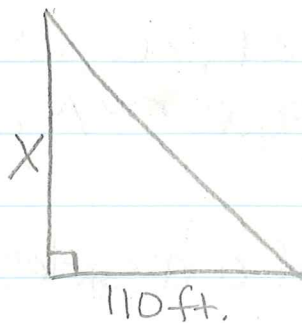
SSS \sim If the measures of corr. sides of two Δ s are proportional, then the Δ s are similar.



SAS \sim If two measures of two sides of a Δ are proportional to the measures of two sides of a second Δ and the included \angle s are \cong , then Δ s are similar.



ex: Mary is 5 ft. tall & she casts a 2 ft. 9 in. shadow. The Superman roller coaster casts a 110 ft. shadow. How tall is the roller coaster?

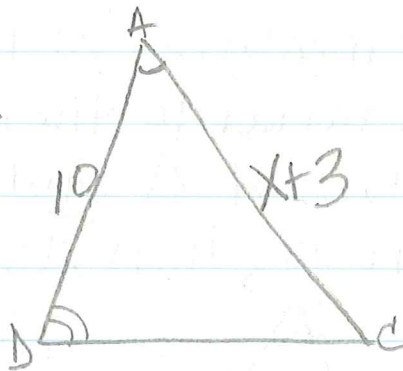
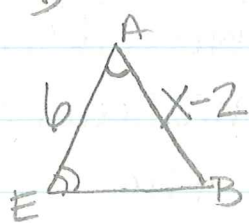
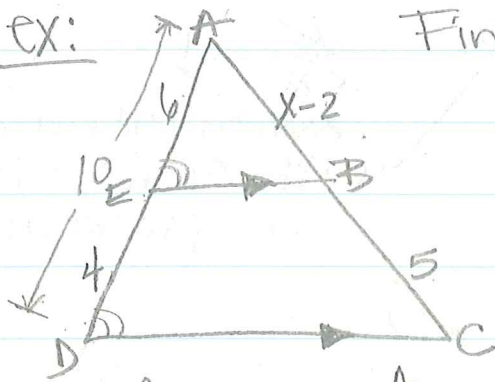


$$\frac{X}{5} = \frac{110}{2.75}$$

$$2.75X = 550$$

$$X = 200 \text{ ft.}$$

ex: Find X.



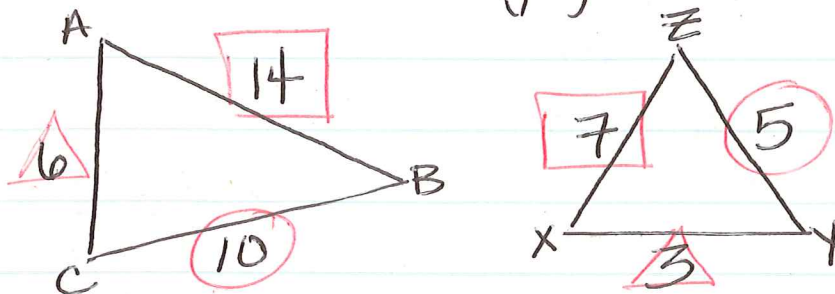
$$\frac{10}{6} = \frac{(X+3)}{(X-2)}$$

$$10(X-2) = 6(X+3)$$

$$38 = 4X$$

$$X = 9.5$$

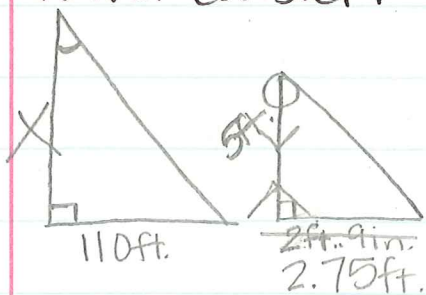
ex: Determine if the pair of Δ s is similar. Justify your answer.



$$\frac{14}{7} = \frac{2}{1} \quad \frac{10}{5} = \frac{2}{1} \quad \frac{6}{3} = \frac{2}{1}$$

$\Delta ABC \sim \Delta XZY$ because of the SSS \sim Theorem.

ex: The height of the Superman roller coaster is unknown, however Mary knows she is 5 ft. tall. Her shadow is 2 ft. 9 in. long & the coaster's shadow is 110 ft. long. Find the ~~the~~ Superman roller coaster.

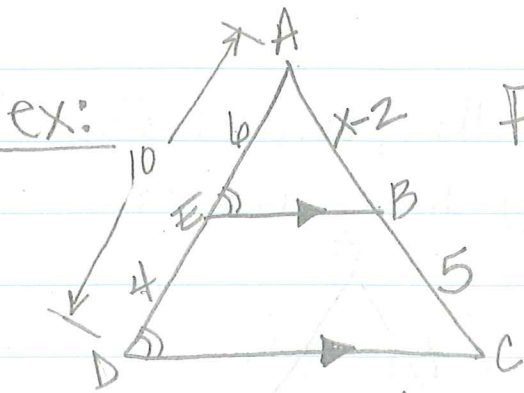


$$\frac{\text{height coaster}}{\text{height Mary}} = \frac{\text{coaster shadow}}{\text{Mary shadow}}$$

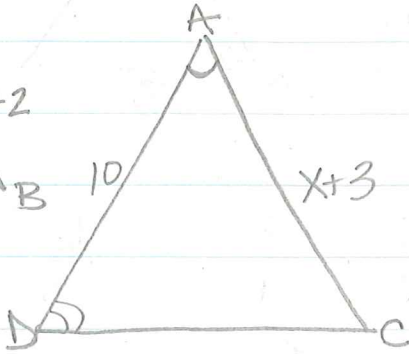
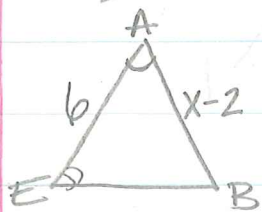
$$\frac{X}{5} = \frac{110}{2.75}$$

$$\frac{2.75X}{2.75} = \frac{550}{2.75}$$

$$X = 200 \text{ ft. tall}$$



Find X.



$$\frac{10}{6} = \frac{(x+3)}{(x-2)}$$

$$10x - 20 = 6x + 18$$

$$-6x + 20 \quad -6x + 20$$

$$\frac{4x}{4} = \frac{38}{4}$$

$$x = 9.5$$