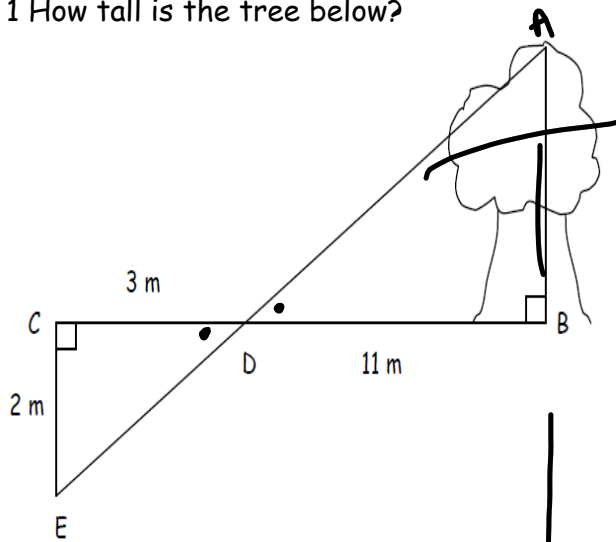


Using Similar Triangles to Solve Problems

Ex. 1 How tall is the tree below?



$$\angle EDC = \angle BDA \text{ OAT}$$

$$\angle C = \angle B \text{ given}$$

$$\therefore \triangle ECD \sim \triangle ABD$$

$$\therefore AA \sim$$

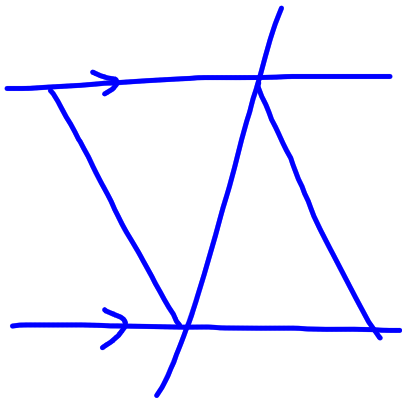
$$CD \sim BD$$

$$\frac{CD}{BD} = \frac{EC}{AB}$$

$$\frac{3}{11} = \frac{2}{T}$$

$$3T = 22$$

$$T = \frac{22}{3}$$



Similar \sim

SSS \sim

SAS \sim

AA \sim

Congruent \cong

SSS \cong

SAS \cong

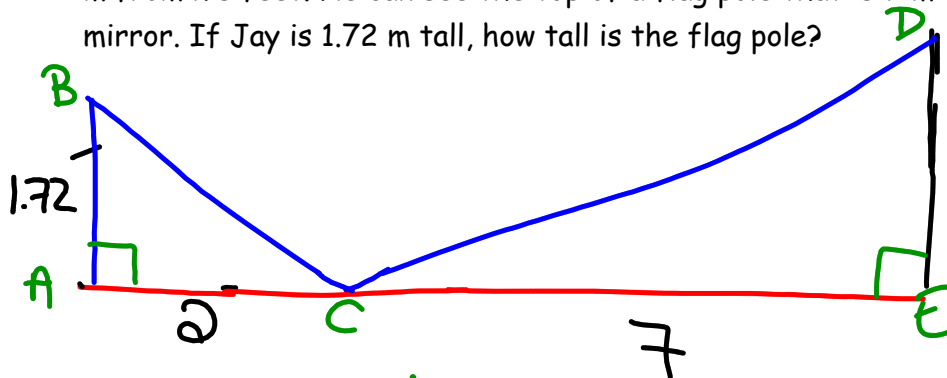
ASA \cong

$\triangle ABC \sim \triangle XYZ$

Using Similar Triangles to Solve Problems

Ex. 2

Jay stands on level ground and looks at the mirror on the ground that is 2 m from his feet. He can see the top of a flag pole that is 7 m from the mirror. If Jay is 1.72 m tall, how tall is the flag pole?



$$\angle A = \angle E \text{ given}$$

$$\angle ACB = \angle ECD \text{ OAT}$$

$$\therefore \triangle ACB \sim \triangle ECD$$

$$\frac{BA}{DE} = \frac{AC}{CE} \quad \frac{1.72}{DE} = \frac{2}{7}$$

$$\therefore 7(1.72) = 2 DE$$

$$\frac{12.04}{2} = \frac{2 DE}{2}$$

$$6.02 = DE$$

\therefore The flagpole is 6.02 m.

1) Draw diagram

2) Label Δ s

3) Prove Δ s are similar

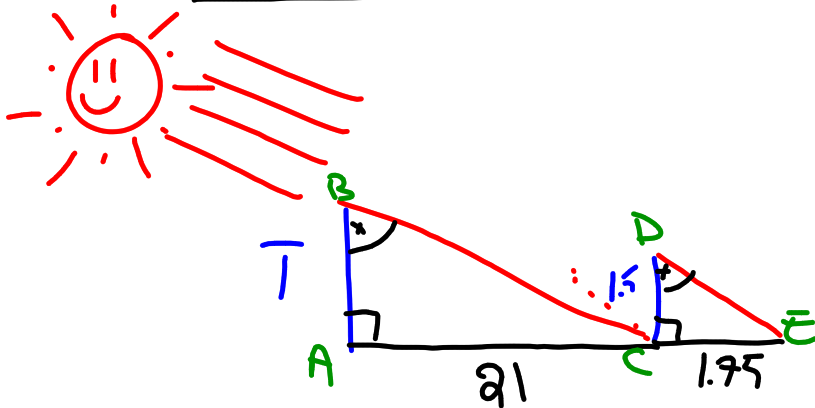
4) Ratio of two pairs of sides

that correspond.

Using Similar Triangles to Solve Problems

Ex. #3

A tower standing on level ground casts a shadow 21 ft long. A vertical stick 1.5 ft high is placed at the tip of the shadow. The stick is found to cast a shadow 1.75 ft long. Assuming that the sun's rays are parallel, find the height of the tower.



$$\angle A = \angle C \text{ given}$$

$$\angle B = \angle D \text{ given}$$

$$\therefore \triangle ABC \sim \triangle CDE$$

$$\therefore AA \sim$$

$$\frac{AC}{CE} = \frac{T}{DC}$$

$$\frac{21}{1.75} = \frac{T}{1.5}$$

$$21(1.5) = 1.75(T)$$

$$\frac{21(1.5)}{1.75} = T$$

$$T = 18$$