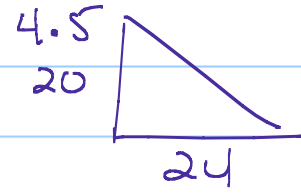
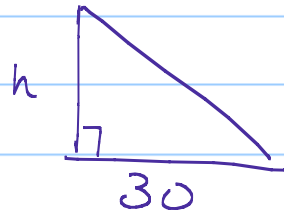
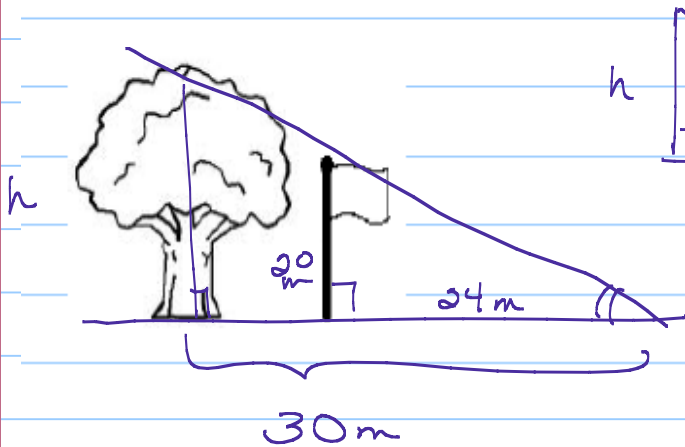


# 8-4 Q&A

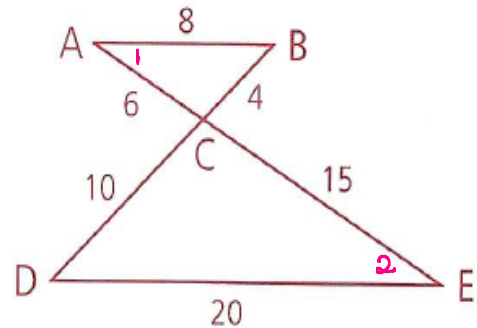
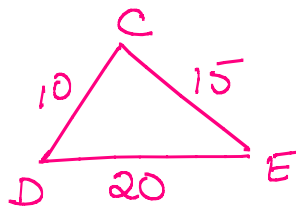
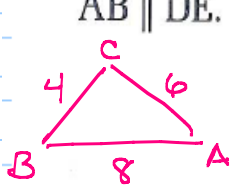
9 A shadow problem: Mannertink observed that a tree was casting a 30-m shadow. A nearby flagpole was casting a 24-m shadow. If the flagpole was 20 m high, how tall was the tree?



$$\frac{h}{30} = \frac{20}{24}, \quad \frac{h}{30} = \frac{5}{6} \quad h = 25m$$

11 Using the diagram at the right, show that  $\overline{AB} \parallel \overline{DE}$ .

AA ~  
SSS ~



$$\frac{AB}{DE} = \frac{8}{20} \text{ or } \frac{2}{5}$$

$$\frac{AC}{CE} = \frac{4}{10} \text{ or } \frac{2}{5}$$

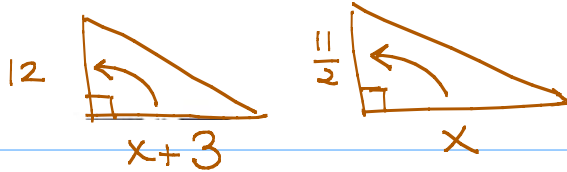
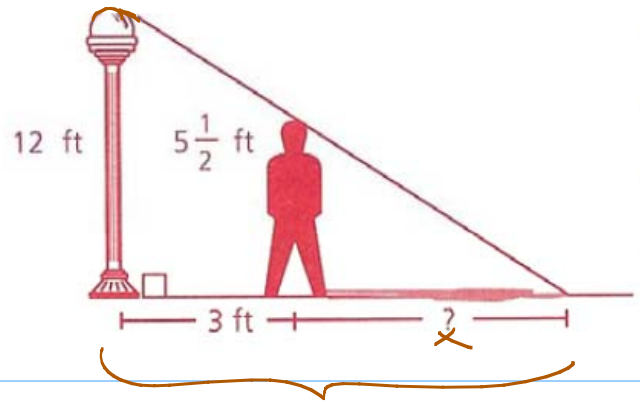
$$\frac{BC}{CD} = \frac{6}{15} \text{ or } \frac{2}{5}$$

SSS ~

& ~  $\Delta$   $\Rightarrow$   $\cong \angle \therefore \angle 1 \cong \angle 2$

ALT. INT.  $\angle s \Rightarrow \parallel \therefore \overline{AB} \parallel \overline{DE}$

20 Shad is 3 ft from a lamppost that is 12 ft high. Shad is  $5\frac{1}{2}$  ft tall. How long is Shad's shadow?



$$\frac{x+3}{12} = \frac{x}{5\frac{1}{2}}, \quad 2\left(\frac{11}{2}(x+3)\right) = (12x)^2$$

$$11(x+3) = 24x$$

$$11x + 33 = 24x$$

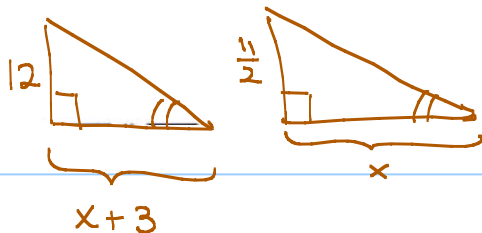
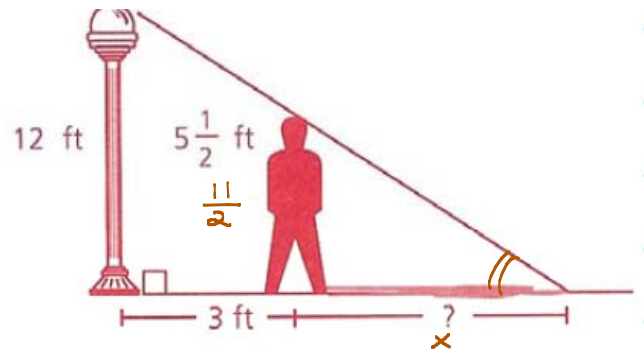
$$-11x \quad -11x$$

$$33 = 13x$$

$$\frac{33}{13} = x$$

$$\frac{33}{13} \text{ ft or } 2\frac{7}{13} \text{ ft}$$

20 Shad is 3 ft from a lamppost that is 12 ft high. Shad is  $5\frac{1}{2}$  ft tall. How long is Shad's shadow?



$$\frac{12}{x+3} = \frac{5\frac{1}{2}}{x}, \quad \square [12x] = \square [5\frac{1}{2}(x+3)]$$

$$24x = 11(x+3)$$

$$24x = 11x + 33$$

$$-11x \quad -11x$$

$$13x = 33$$

$$x = \frac{33}{13} \text{ or } 2\frac{7}{13} \text{ ft}$$

