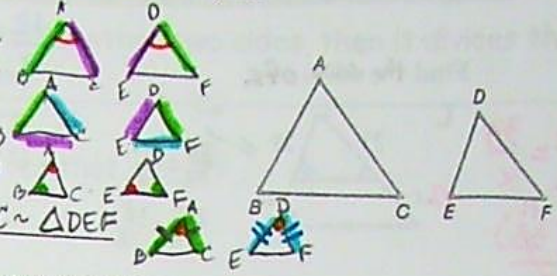


8.4 Congruence & Proportion in $\sim \Delta$ s

Using the given information, tell which triangles are similar. (The diagram is not drawn to scale.)

- $\frac{AB}{DF} = \frac{AC}{DE}; \angle A \cong \angle D \implies \Delta ABC \sim \Delta DFE$
- $\frac{AB}{FD} = \frac{BC}{DE} = \frac{AC}{FE} \implies \Delta ABC \sim \Delta FDE$
- $\angle A \cong \angle E; \angle B \cong \angle F \implies \Delta ABC \sim \Delta EFD$
- $AB = AC; DE = DF; \angle A \cong \angle D \implies \Delta ABC \sim \Delta DEF$



Complete each statement with the word *always*, *sometimes*, or *never*.

- Two **equilateral** triangles are Always similar.
- Two **similar** triangles are Sometimes congruent.
- Two **congruent** triangles are Always similar.
- Two **isosceles right** triangles are Always similar.

9. Find the values of x and y . Refer to the figure.

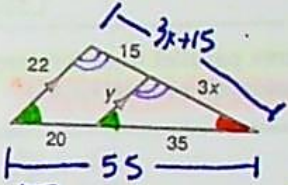
$x = 8.75$
 $y = 14$

$$\frac{7}{11} = \frac{x}{3x+15}$$

$$33x = 21x + 105$$

$$12x = 105$$

$$x = 8.75$$



Scale Factor $\frac{35}{55} = \frac{7}{11}$

Whole side / Whole side = Scale factor

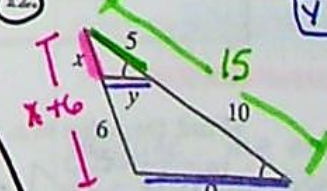
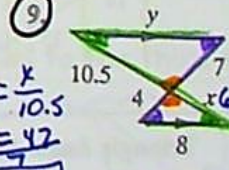
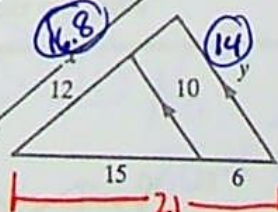
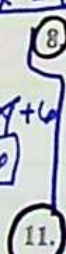
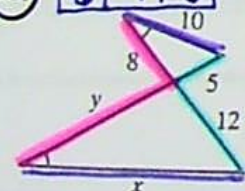
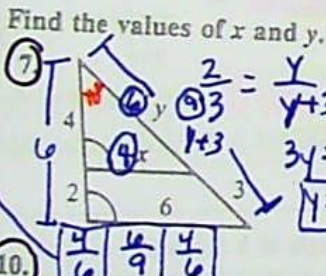
SF

$$\frac{4}{6} = \frac{2}{3}$$

$$\frac{2}{3} = \frac{x}{6}$$

$$3x = 12$$

$$x = 4$$



SF: $\frac{5}{12}$

$$\frac{5}{12} = \frac{10}{x}$$

$$5x = (12)(10)$$

$$5x = 120$$

$$x = 24$$

$$\frac{5}{12} = \frac{8}{y}$$

$$5y = 96$$

$$y = 19.2$$

SF $\frac{15}{21} = \frac{5}{7}$

$$\frac{5}{7} = \frac{12}{x}$$

$$5x = 84$$

$$x = 16.8$$

$$\frac{5}{7} = \frac{10}{y}$$

$$5y = 70$$

$$y = 14$$

SF: $\frac{5}{15} = \frac{1}{3}$

$$\frac{1}{3} = \frac{x}{x+6}$$

$$3x = x+6$$

$$2x = 6$$

$$x = 3$$

$$\frac{1}{3} = \frac{y}{9}$$

$$3y = 9$$

$$y = 3$$