

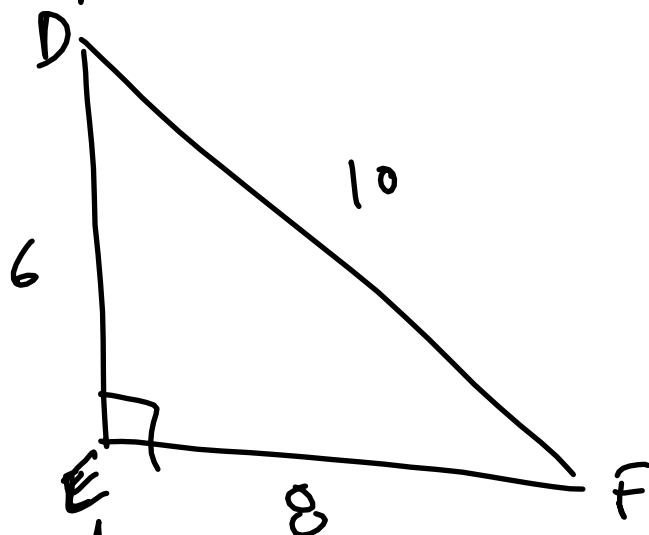
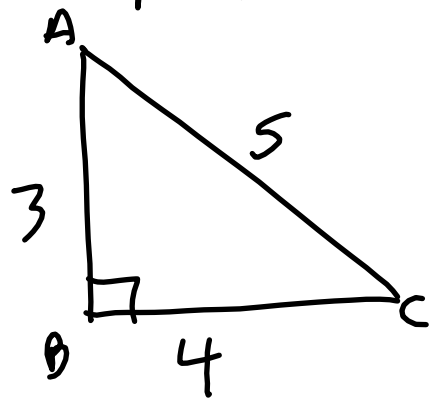
Similar Polygons

- Shapes are considered to be similar if their corresponding angles are congruent + their corresponding sides are in the same proportion

→ Express similarity using " \sim "

→ Extended proportion → proportion involving each set of corresponding sides

EX →



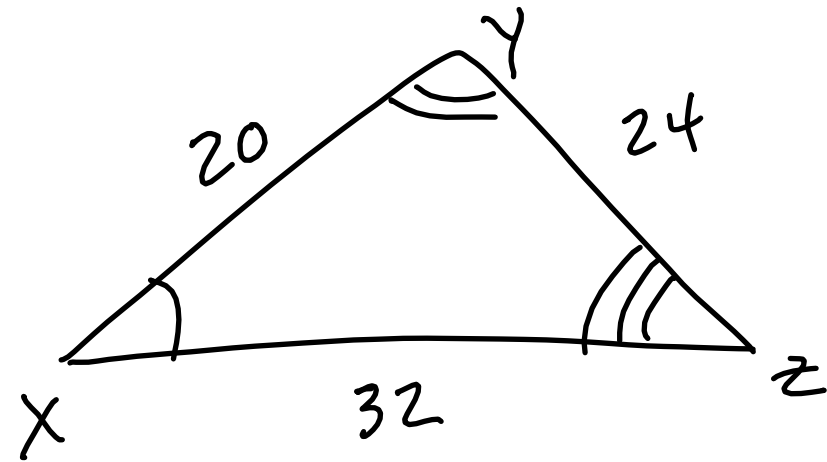
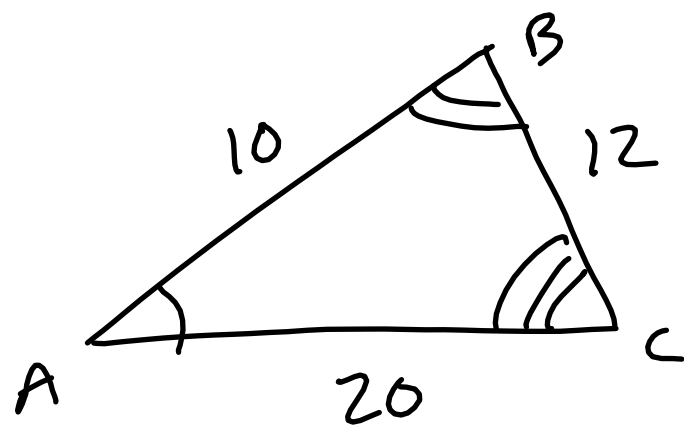
$$\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$$

$$\frac{3}{6} = \frac{4}{8} = \frac{5}{10} \Rightarrow \frac{1}{2} = \frac{1}{2} = \frac{1}{2}$$

↓
Scale factor

→ Scale factor → ratio of corresponding sides

EX → Are these polygons similar?



$$\frac{AB}{XY} = \frac{BC}{YZ} = \frac{AC}{XZ}$$

$$\frac{10}{20} = \frac{12}{24} = \frac{20}{32} \Rightarrow \frac{1}{2} = \frac{1}{2} = \frac{5}{8}$$

NOT SIMILAR

- Scale drawings → drawing that uses lengths proportional to actual lengths

↳ scale compares length in drawing to actual length

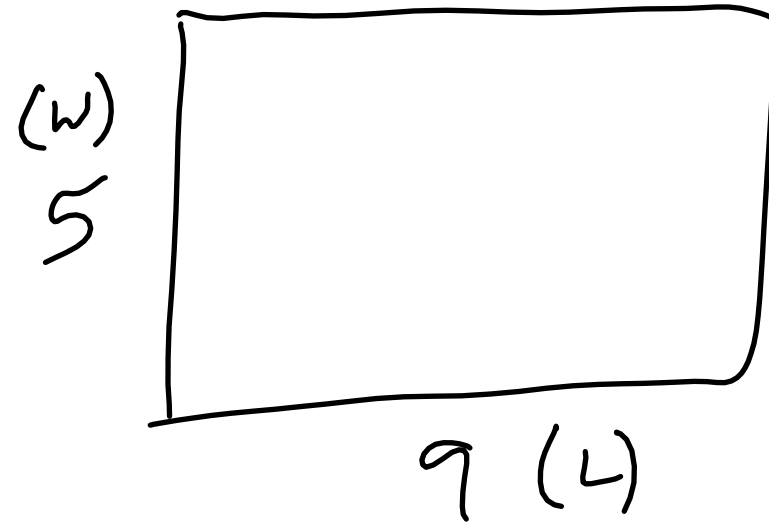
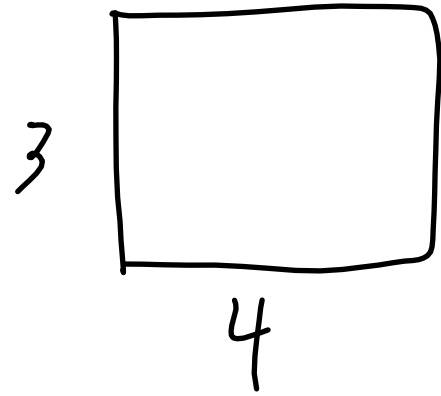
EX → Scale on map expresses 1 in. = 150 mi. Distance from Corbin to Los Angeles is 2,230 mi. What length would this distance be on the map?

$$\frac{1 \text{ in}}{150 \text{ mi}} \times \frac{x \text{ in}}{2,230 \text{ mi}}$$

$$150x = \frac{2,230}{150}$$

$$x = 14.8\bar{6} \text{ in}$$

Ex → Sides of a TV are in a 3:4 ratio. A wall has an area 5 ft. by 9 ft. to place the TV. What are the largest possible measurements for the TV?



$$\frac{5}{3} = 1 \frac{2}{3} \quad \frac{9}{4} = 2 \frac{1}{4}$$

↑
use smaller factor

$$3 \cdot \frac{5}{3} = 5 \text{ ft}$$

$$4 \cdot \frac{5}{3} = \frac{20}{3} = 6 \frac{2}{3} \text{ ft.}$$

HW: p. 444 → 10-38 even (omit 36), 48