

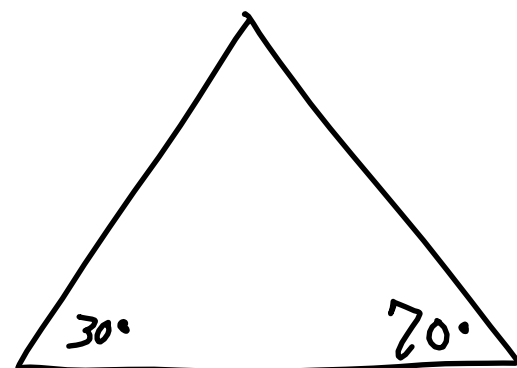
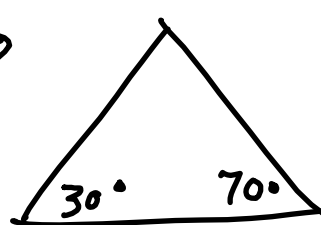
# Proving Triangles Similar

- 3 ways to prove triangles similar

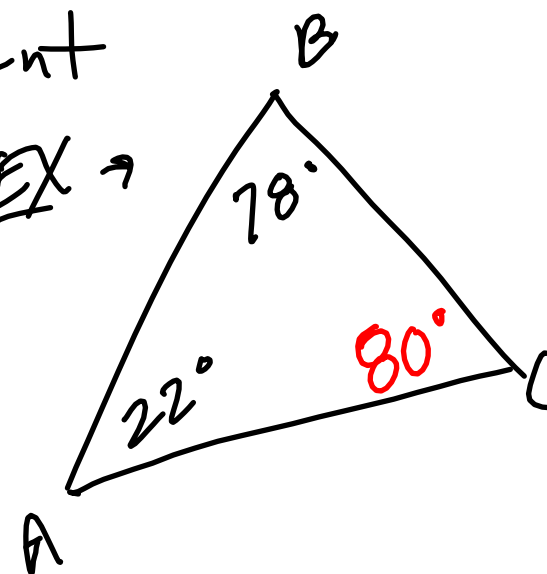
1) Angle-Angle Similarity (AA~)

↳ 2 angles must be congruent

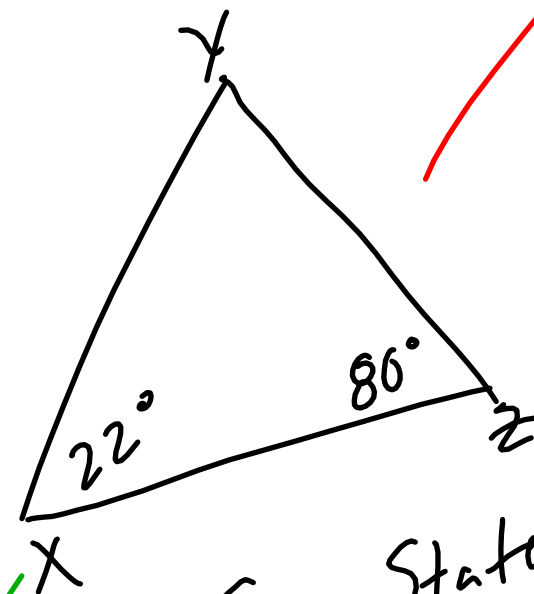
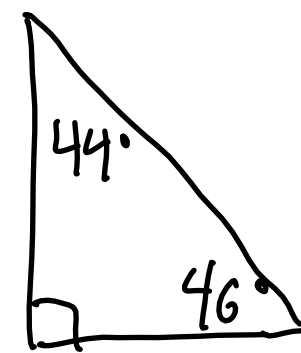
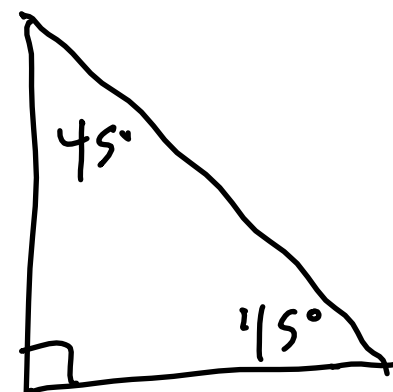
EX →



EX →



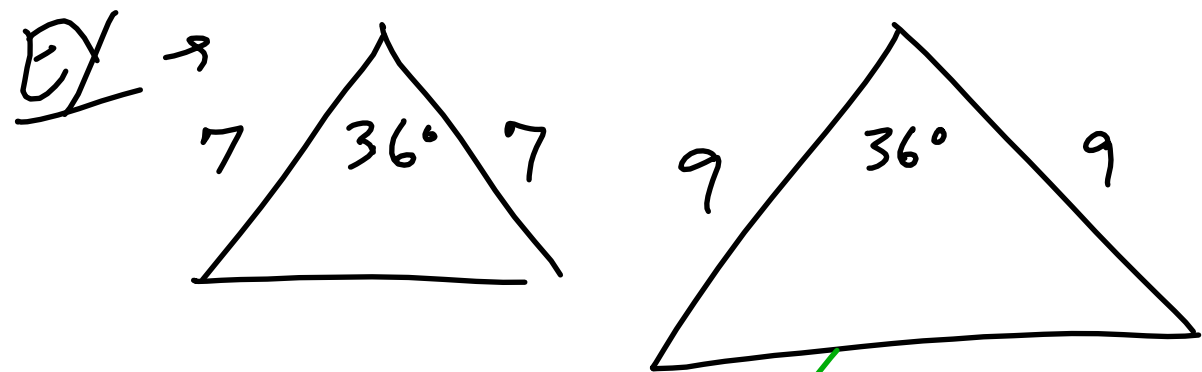
EX →



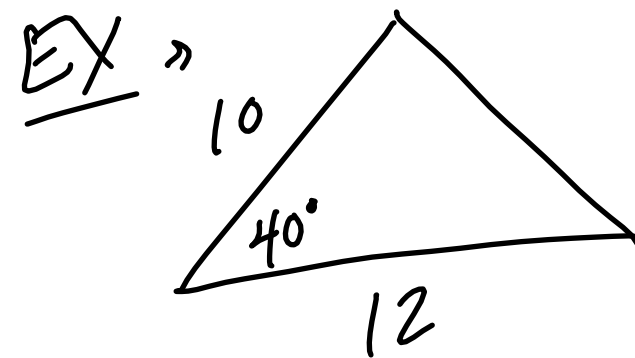
Sim. Statement  
 $\triangle ABC \sim \triangle XYZ$

## 2) Side-Angle-Side Similarity (SAS $\sim$ )

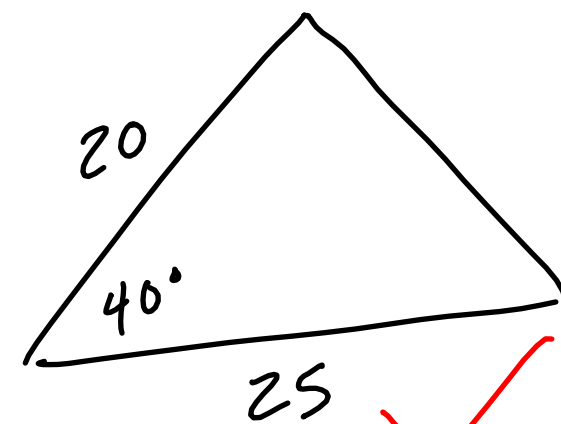
↳ need 2 sides & congruent angle between



$$\frac{7}{9} = \frac{7}{9}$$

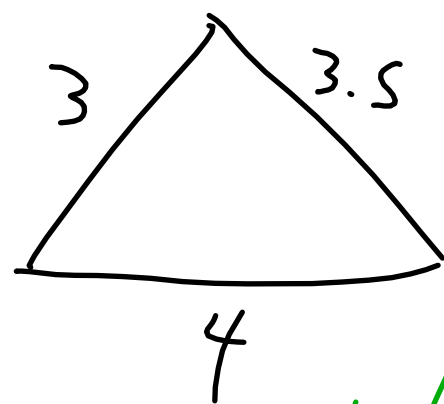
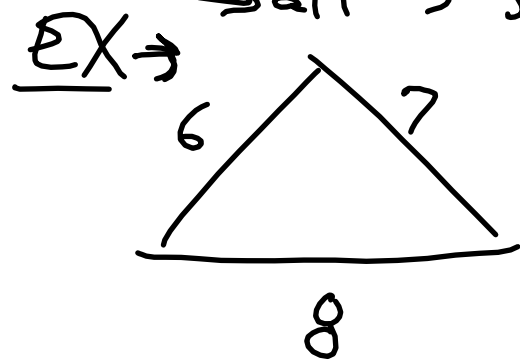


$$\frac{1}{2} \frac{10}{20} \neq \frac{12}{25}$$



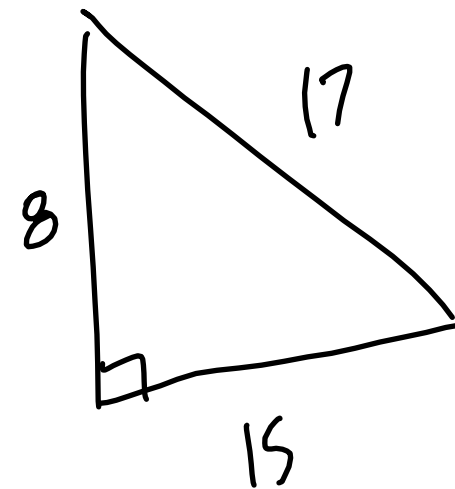
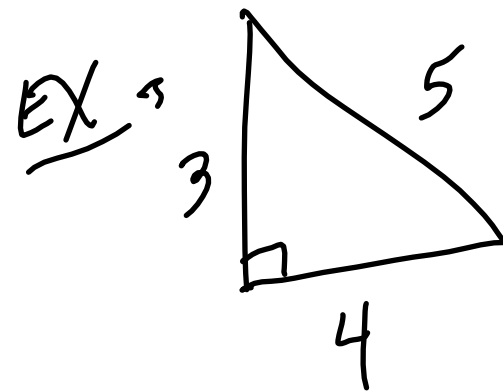
## 3) Side-Side-Side Similarity (SSS $\sim$ )

↳ all 3 sides are proportional



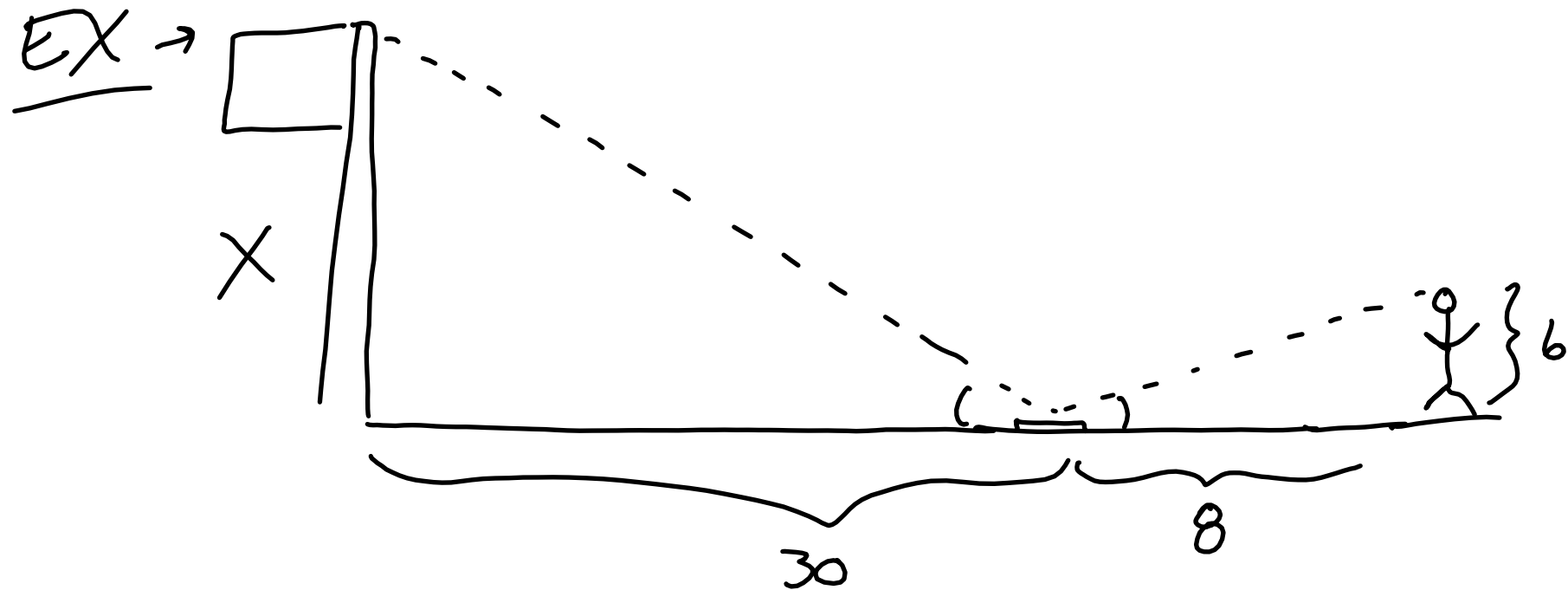
$$\frac{6}{3} = \frac{7}{3.5} = \frac{8}{4}$$

$$\frac{2}{1} = \frac{2}{1} = \frac{2}{1}$$



$$\frac{3}{8} \neq \frac{5}{17} \neq \frac{4}{15}$$

- Using Similar Triangles

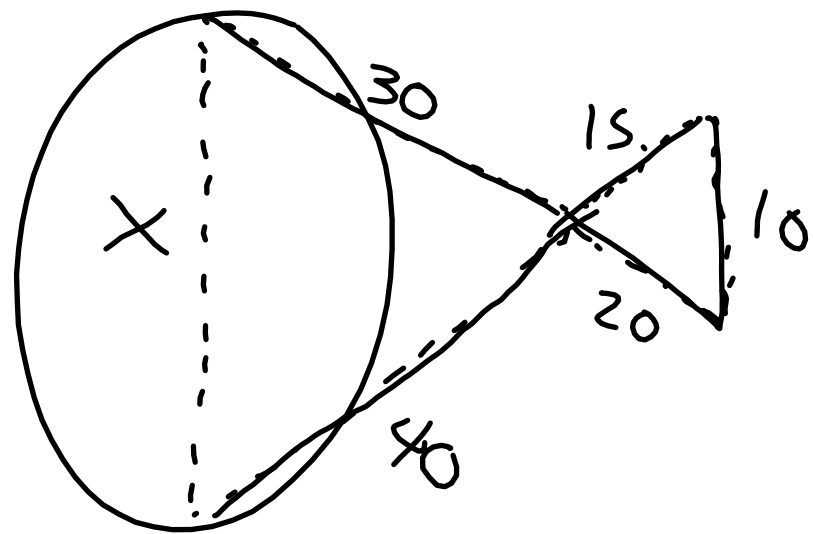


$$\frac{15}{4} \frac{30}{8} = \frac{X}{6}$$

$$\frac{4X}{4} = \frac{90}{4}$$

$$X = 22.5$$

EX →



$$\frac{10'}{X} = \frac{15}{30} \frac{1}{2}$$
$$X = 20$$

HW: p. 455 → 7-12, 15-20, 37-39