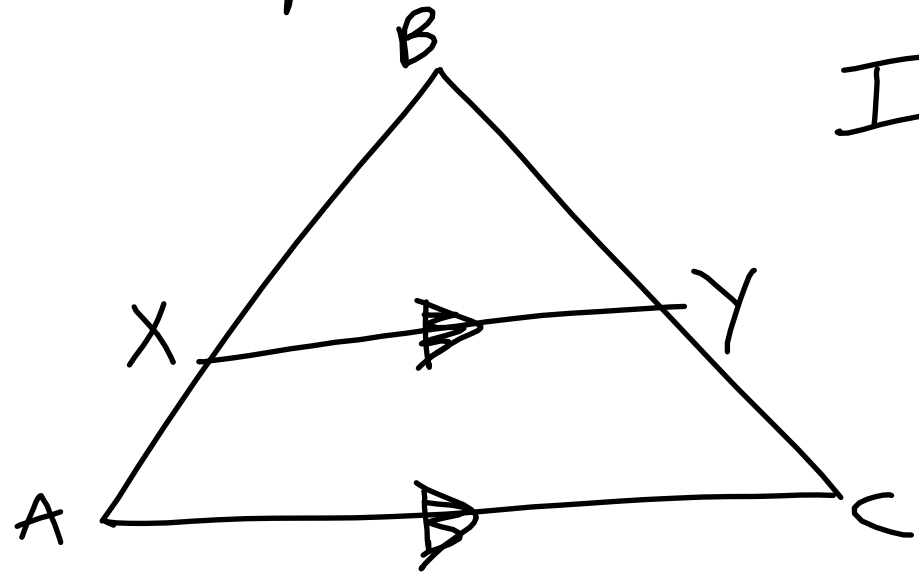


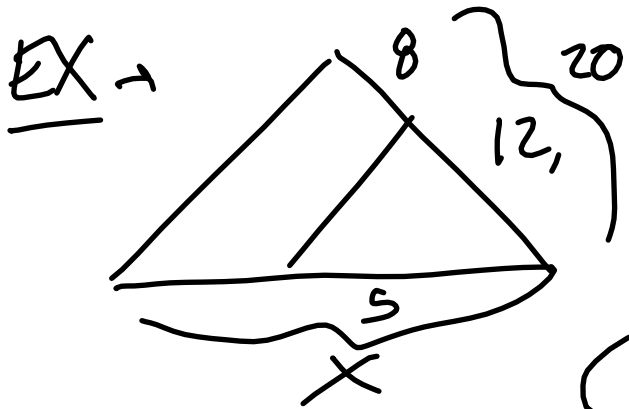
Proportions in Triangles

- Side-Splitter Theorem



If $\overline{AC} \parallel \overline{XY}$,

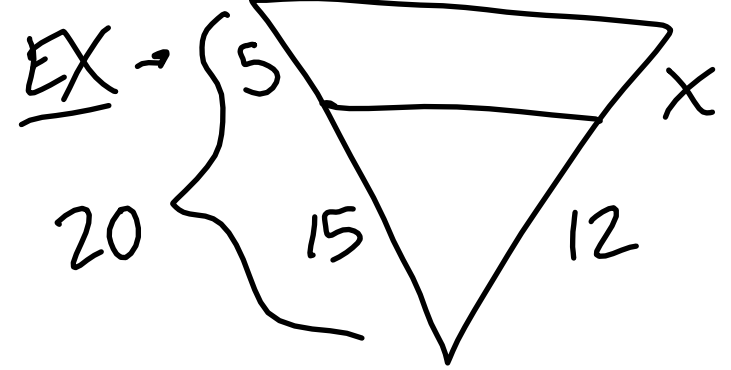
$$\frac{BX}{AX} = \frac{BY}{YC}$$



$$\frac{X}{5} = \frac{20}{12} \cdot \frac{5}{3}$$

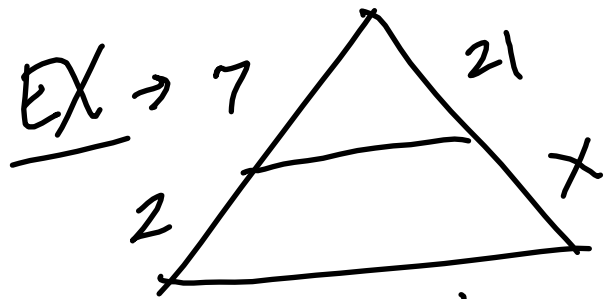
$$3X = 25$$

$$X = 8.\bar{3}$$



$$\frac{1}{3} \frac{8}{18} = \frac{X}{12}$$

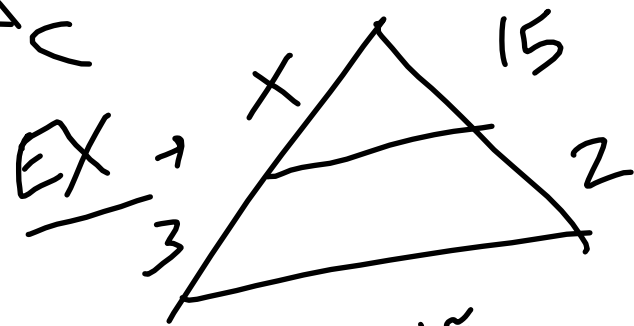
$$3X = 12 \Rightarrow X = 4$$



$$\frac{7}{2} = \frac{21}{X}$$

$$7X = 42$$

$$X = 6$$

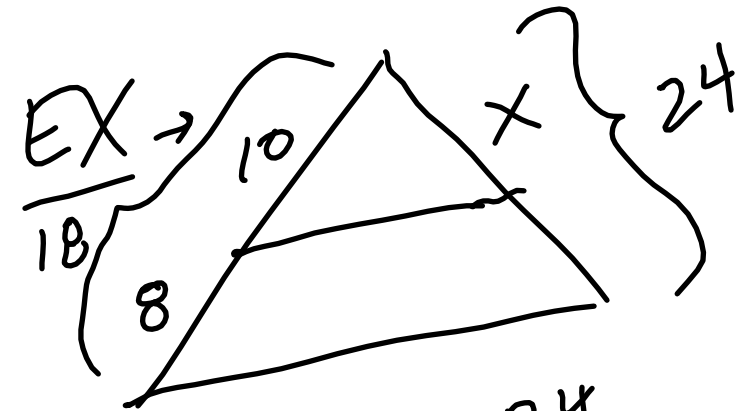


$$\frac{X}{3} = \frac{15}{2}$$

$$2X = 45$$

$$X = \frac{45}{2}$$

$$22.5$$



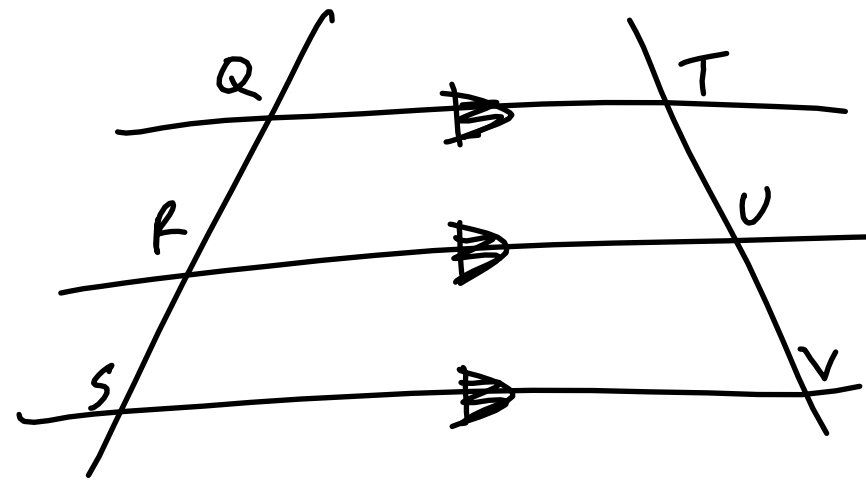
$$\frac{9}{5} \frac{18}{10} = \frac{24}{X}$$

$$9X = 120$$

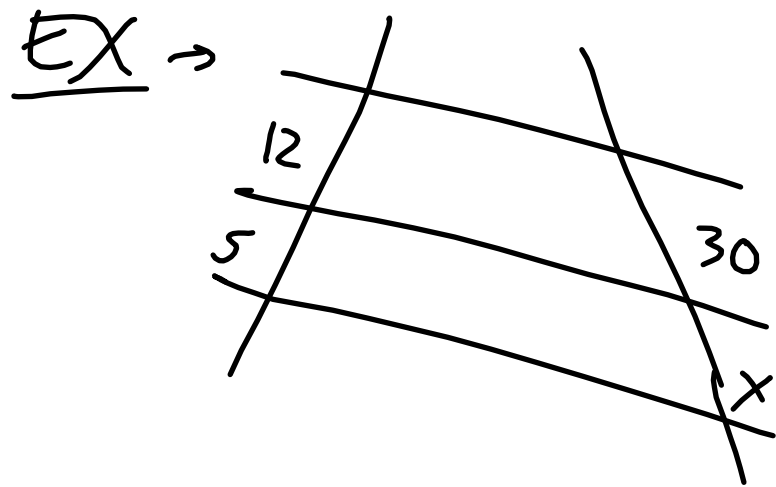
$$X = \frac{120}{9} = \frac{40}{3} = 13.\bar{3}$$

$$13.\bar{3}$$

- Corollary to Side-Splitter Theorem



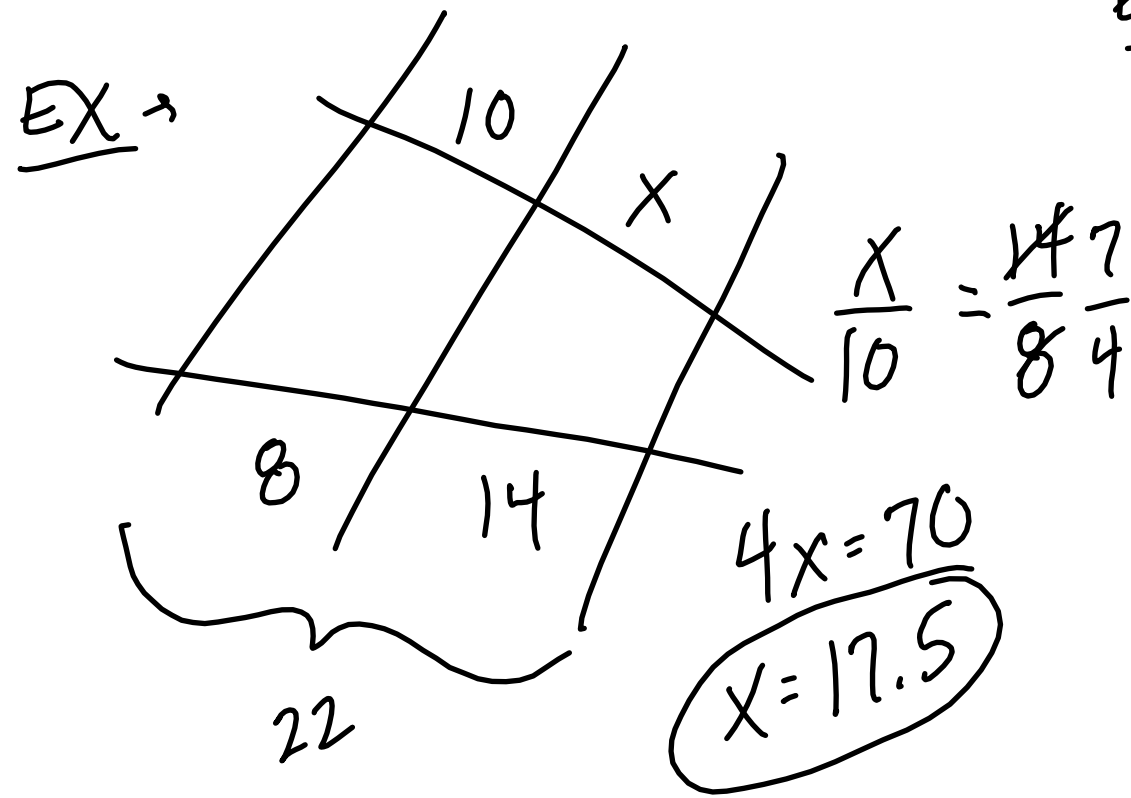
If $\overline{QT} \parallel \overline{RU} \parallel \overline{SV}$, $\frac{QR}{RS} = \frac{TU}{UV}$



$$\frac{12}{5} = \frac{30}{x}$$

$$12x = 150$$

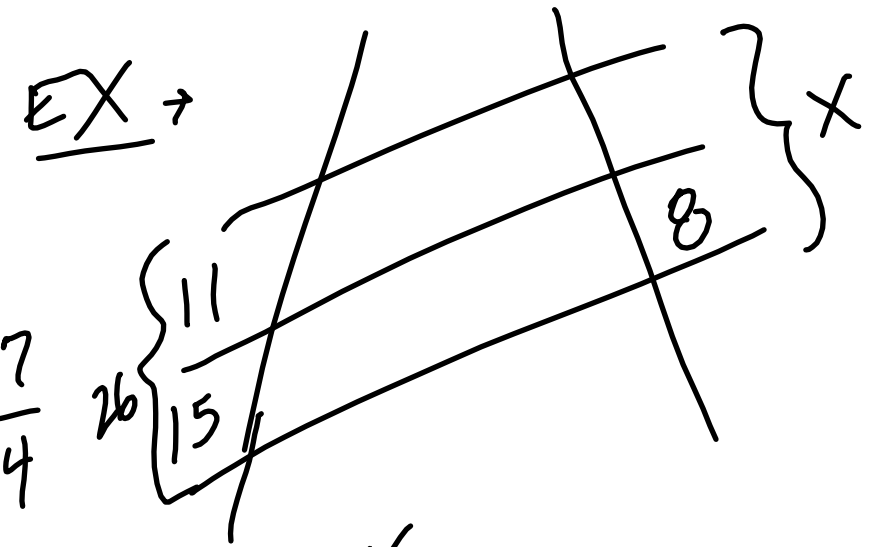
$$x = 12.5$$



$$\frac{x}{10} = \frac{14}{8}$$

$$4x = 70$$

$$x = 17.5$$

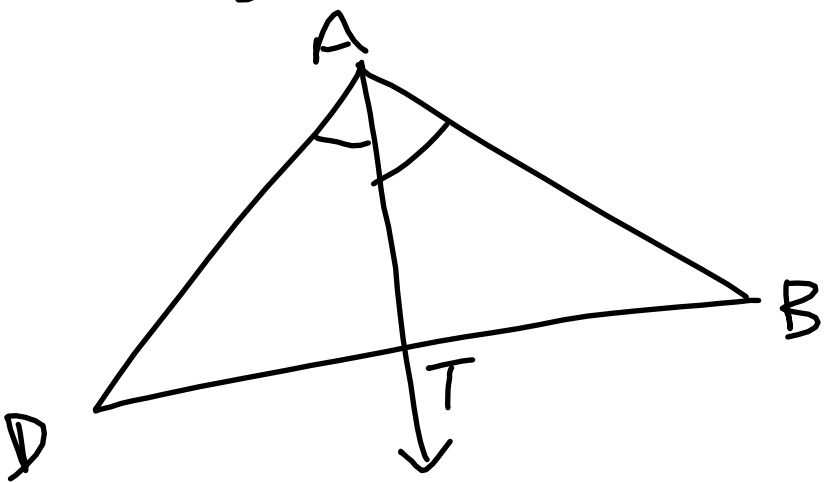


$$\frac{26}{15} = \frac{x}{8}$$

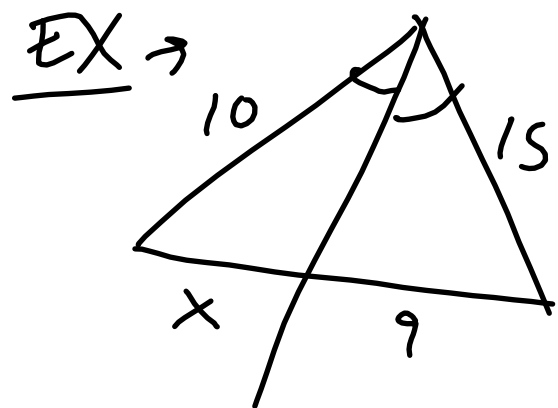
$$15x = 208$$

$$x = \frac{208}{15} \approx 13.9$$

- Triangle-Angle Bisector Theorem



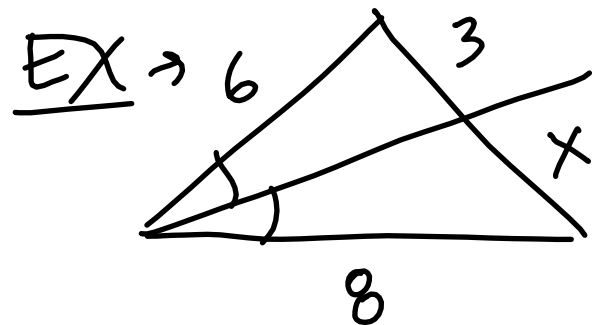
If \vec{AT} bisects $\angle DAB \Rightarrow \frac{AD}{DT} = \frac{AB}{TB}$



$$\frac{10}{x} = \frac{15}{9} \quad \frac{5}{3}$$

$$5x = 30$$

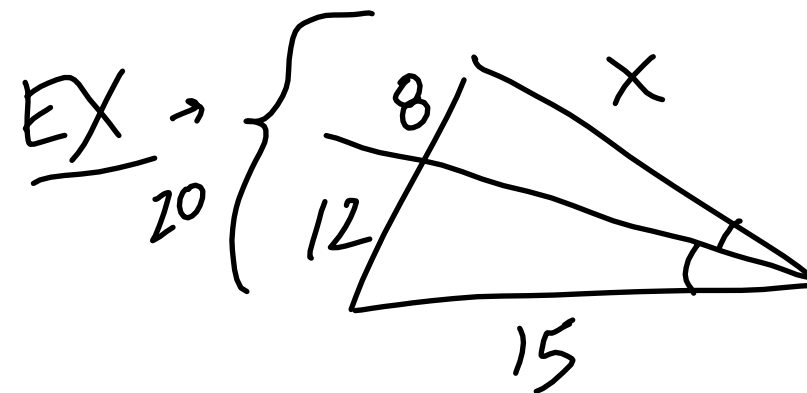
$$x = 6$$



$$\frac{2}{1} \frac{6}{8} = \frac{8}{x}$$

$$2x = 8$$

$$x = 4$$



$$\frac{x}{8} = \frac{18}{12} \quad \frac{3}{2}$$

$$4x = 40$$

$$x = 10$$

HW: p. 475 → 9-22, 26-34 even