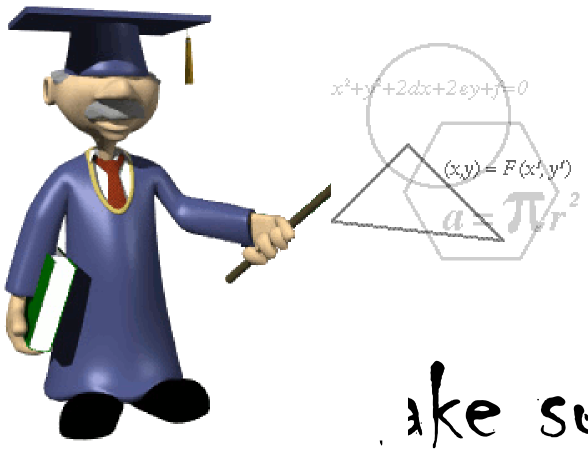
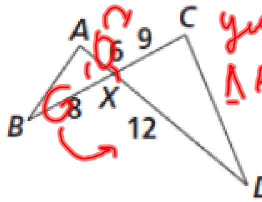


Good Morning!

ake sure ur rdy2go
when the bell rings!

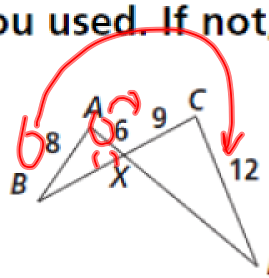
Are the triangles similar? If so, write a similarity statement and name the postulate or theorem you used. If not, explain.

1.



yes
ΔAXB ~ ΔCXD
SAS~

2.

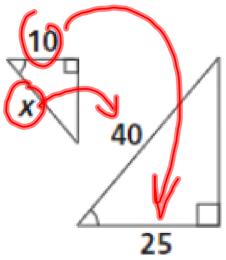


No
∠ not incl btwn sides

3.

ΔMTR ~ ΔXWR
AA~

4. Find the value of *x*.

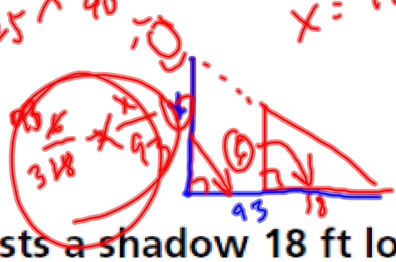


16

$\frac{10}{25} = \frac{x}{40}$

$\frac{400}{25} = x$

$x = 16$



$\frac{x}{6} = \frac{93}{18}$

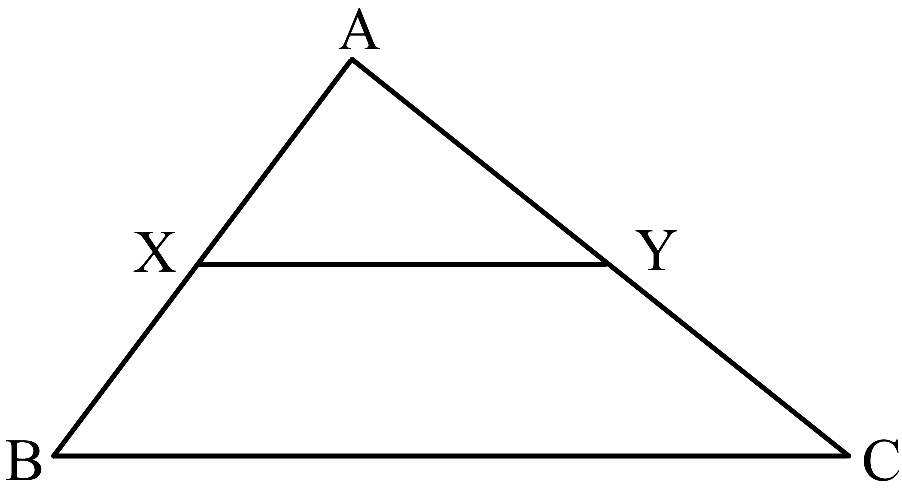
31 ft.

5. When a 6 ft tall man casts a shadow 18 ft long, a nearby tree casts a shadow 93 ft long. How tall is the tree?


00:00 00

Proportions within Triangles

$\overline{XY}$ is a midsegment of ΔABC...



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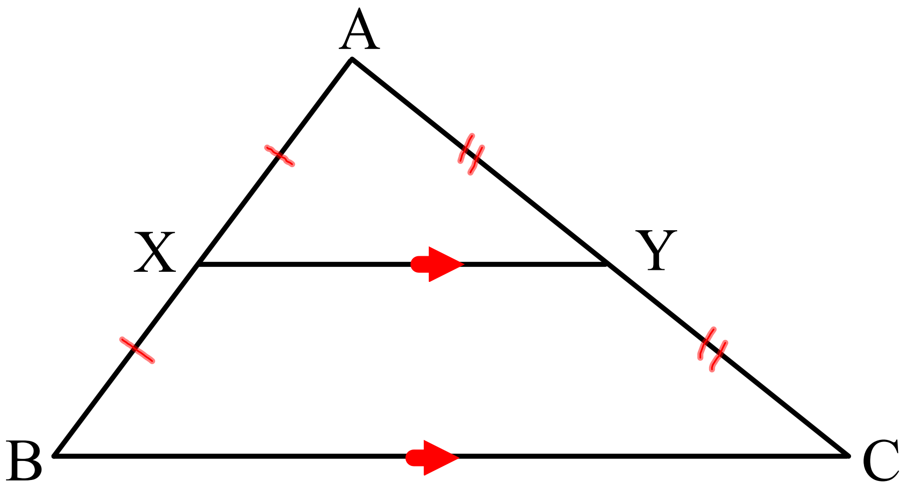
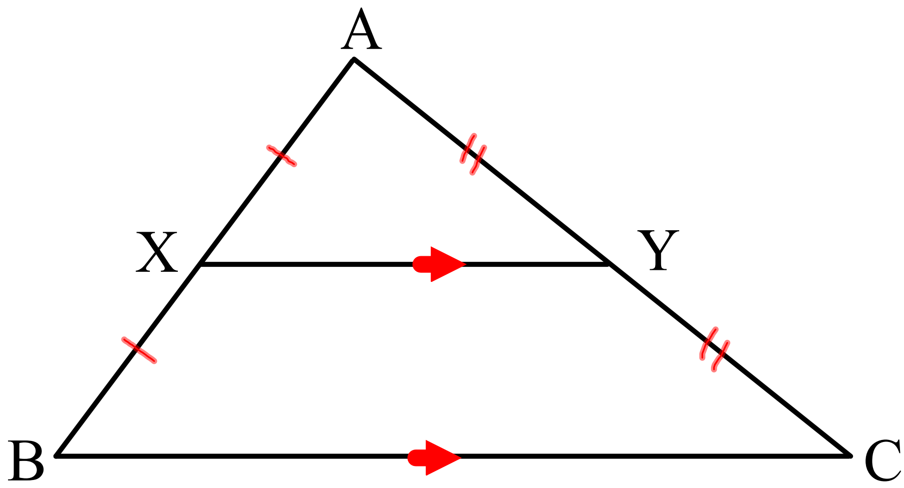


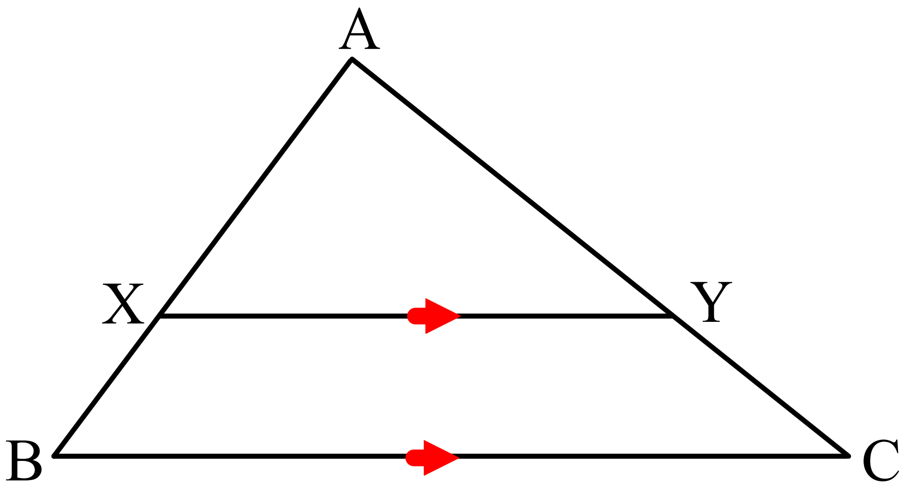
Proportions within Triangles

What if $\overline{XY}$ is $\parallel$ but not a midsegment of ΔABC...



Proportions within Triangles

What if $\overline{XY}$ is || but not a midsegment of ΔABC...



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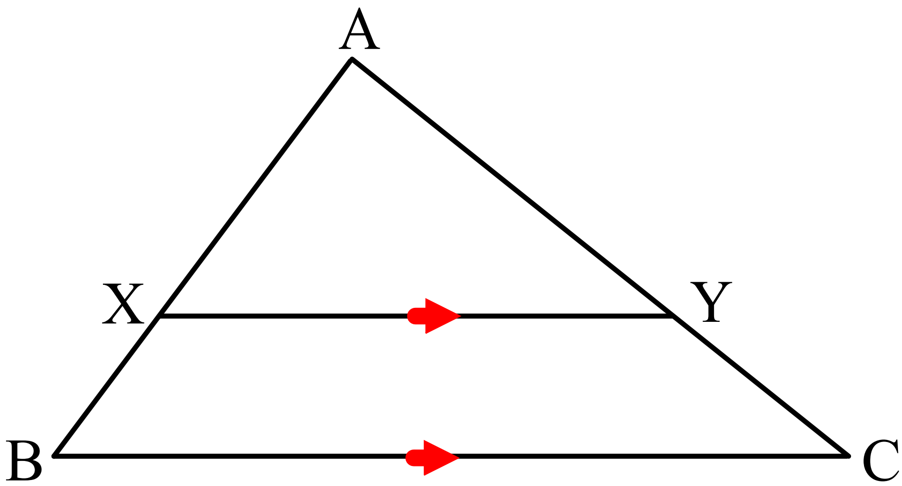
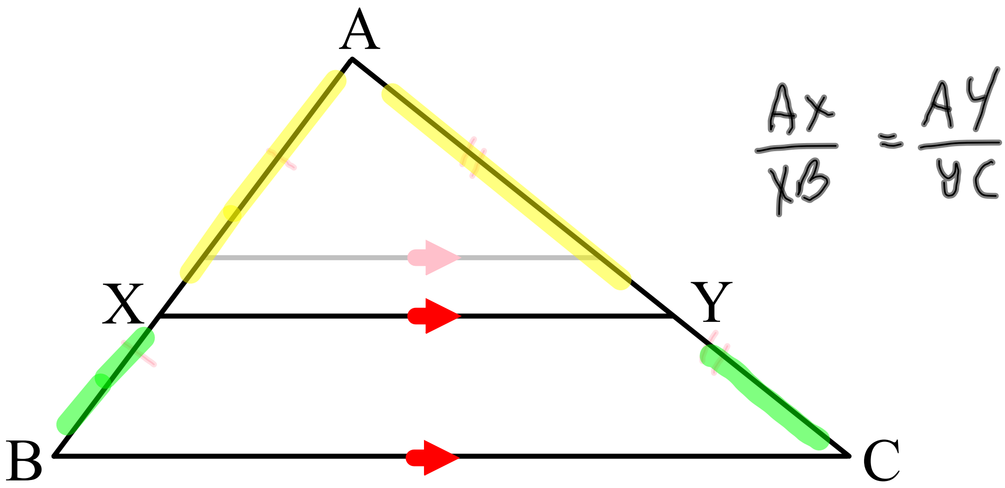


How does $\overline{XY}$ divide the sides of ΔABC?

Proportions within Triangles

What if $\overline{XY}$ is ∥ but not a midsegment of ΔABC...



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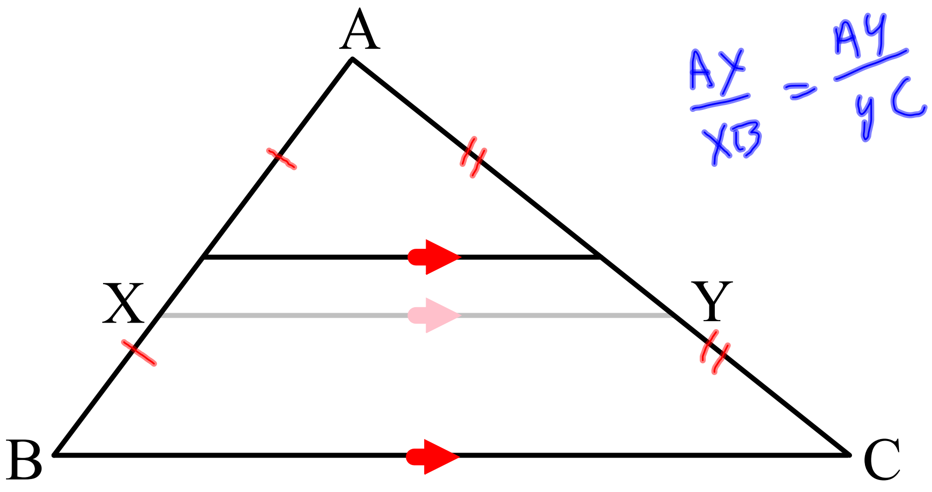

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Theorem 8-4: Side-Splitter Theorem

If a line is || to 1 side of a Δ and intersects the other 2 sides then it divides those sides proportionally.

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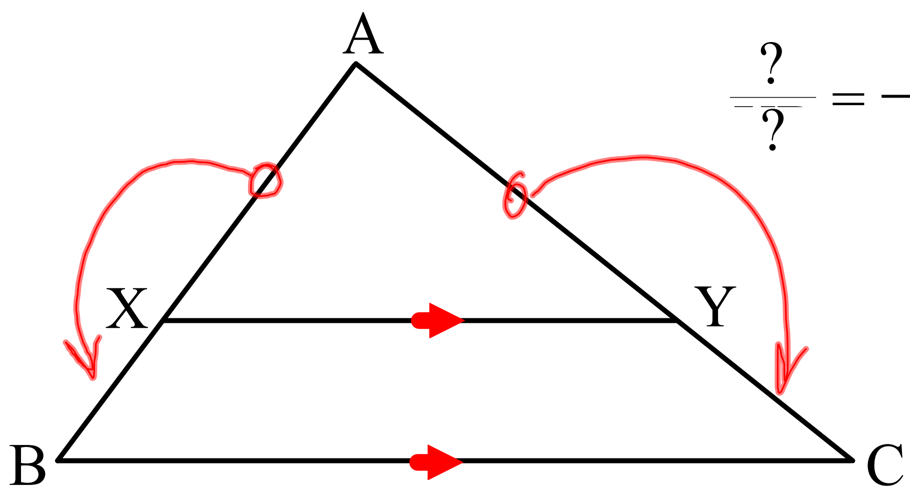

$$\frac{?}{?} = \frac{?}{?}$$

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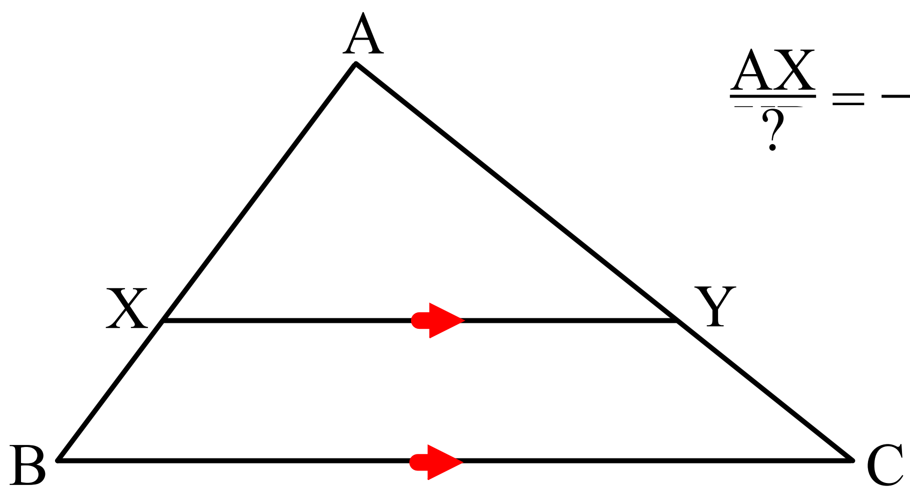

$$\frac{AX}{?} = \frac{?}{?}$$

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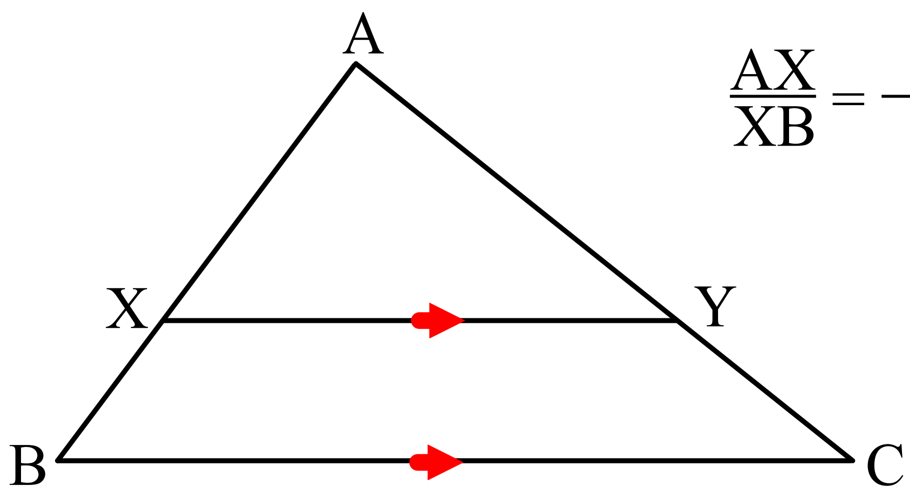

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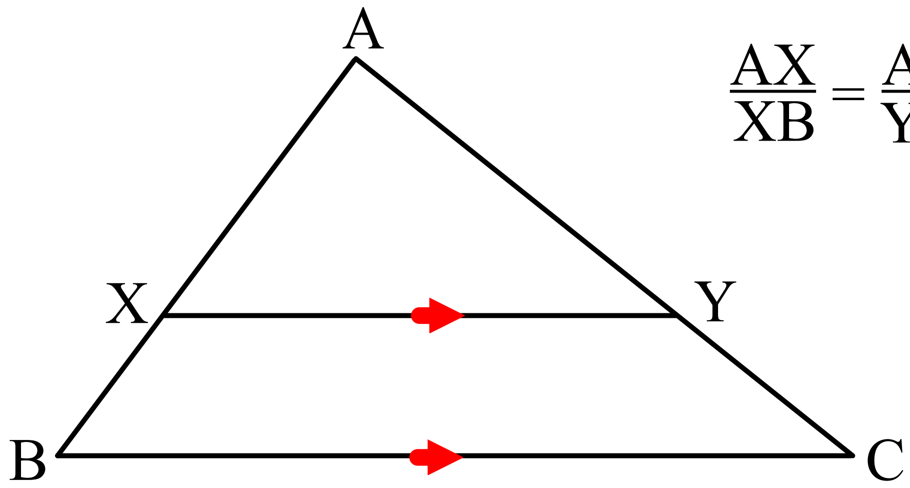


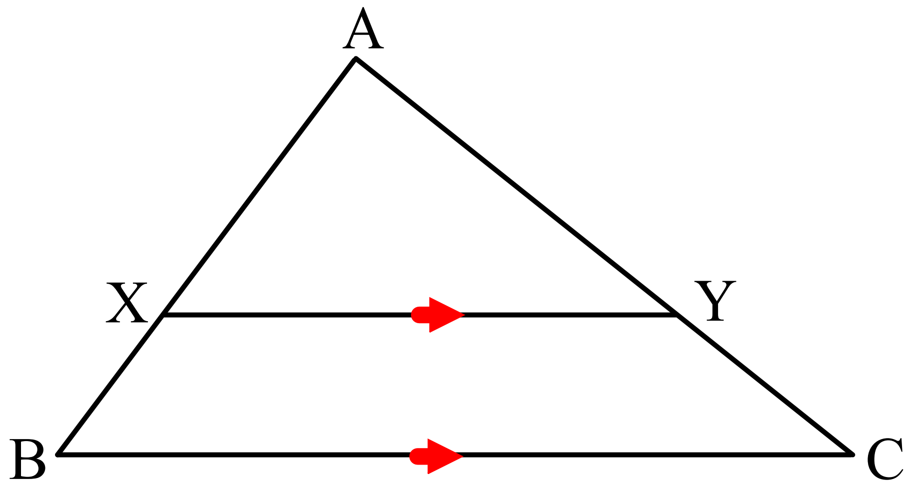
$$\frac{AX}{XB} = \frac{AY}{YC}$$

Theorem 8-4: Side-Splitter Theorem

...another way to look at the side-splitter thm...

Theorem 8-4: Side-Splitter Theorem

If a line is || to 1 side of a Δ and intersects the other 2 sides then it divides Δ into 2 proportional Δ's.



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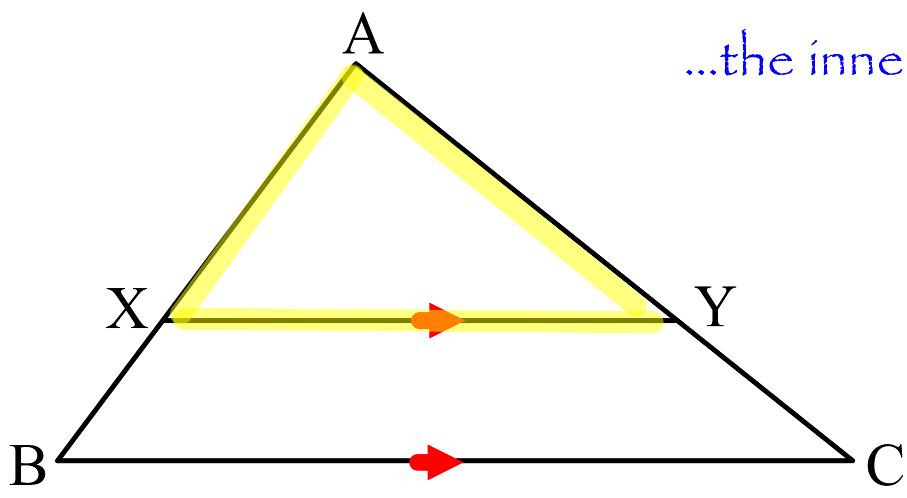

...the inner

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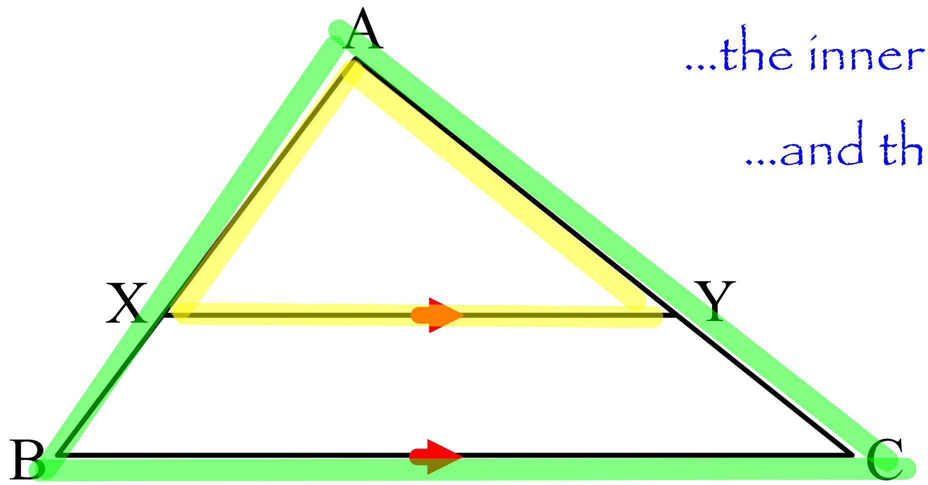

...the inner

...and the outer

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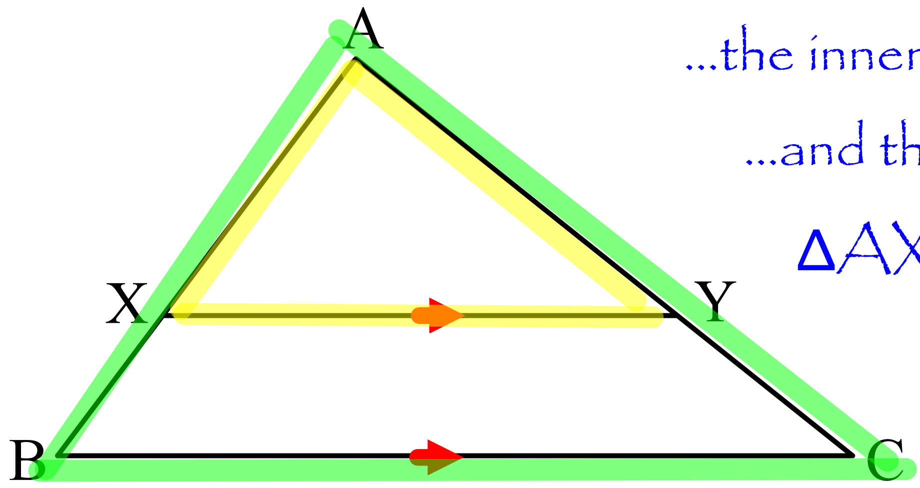


...the inner

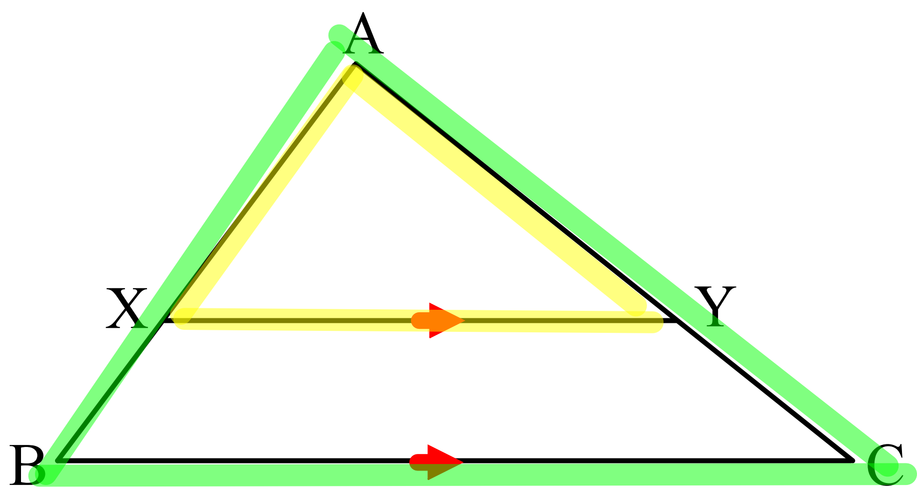
...and the outer

ΔAXY ~ ΔABC

Theorem 8-4: Side-Splitter Theorem

...divides Δ into 2 proportional Δ's. ...the inner ...and the outer

$\Delta AXY \sim \Delta ABC$



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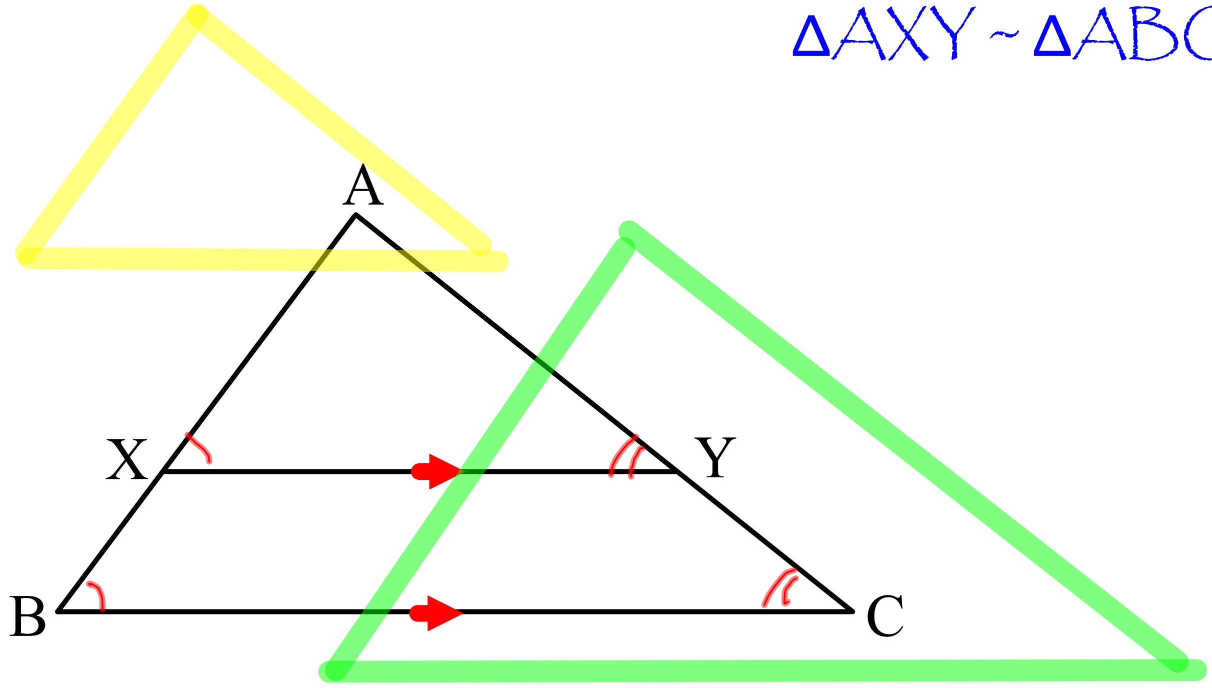

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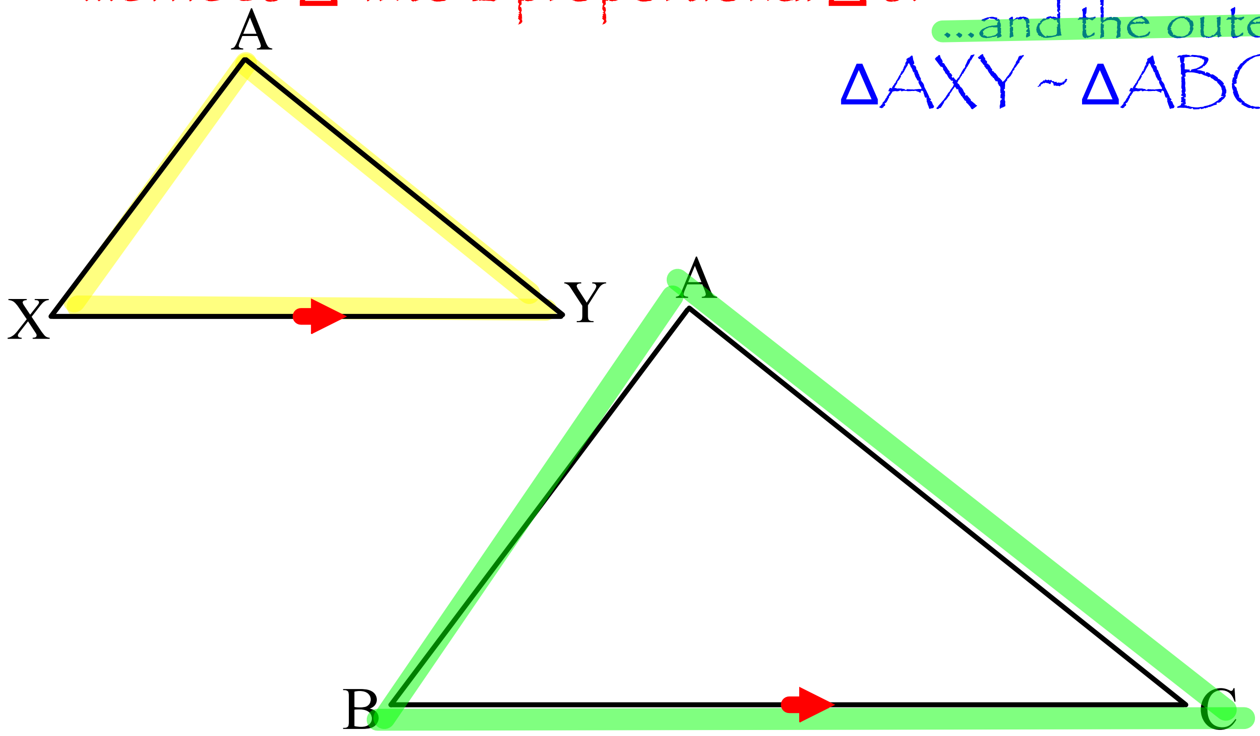

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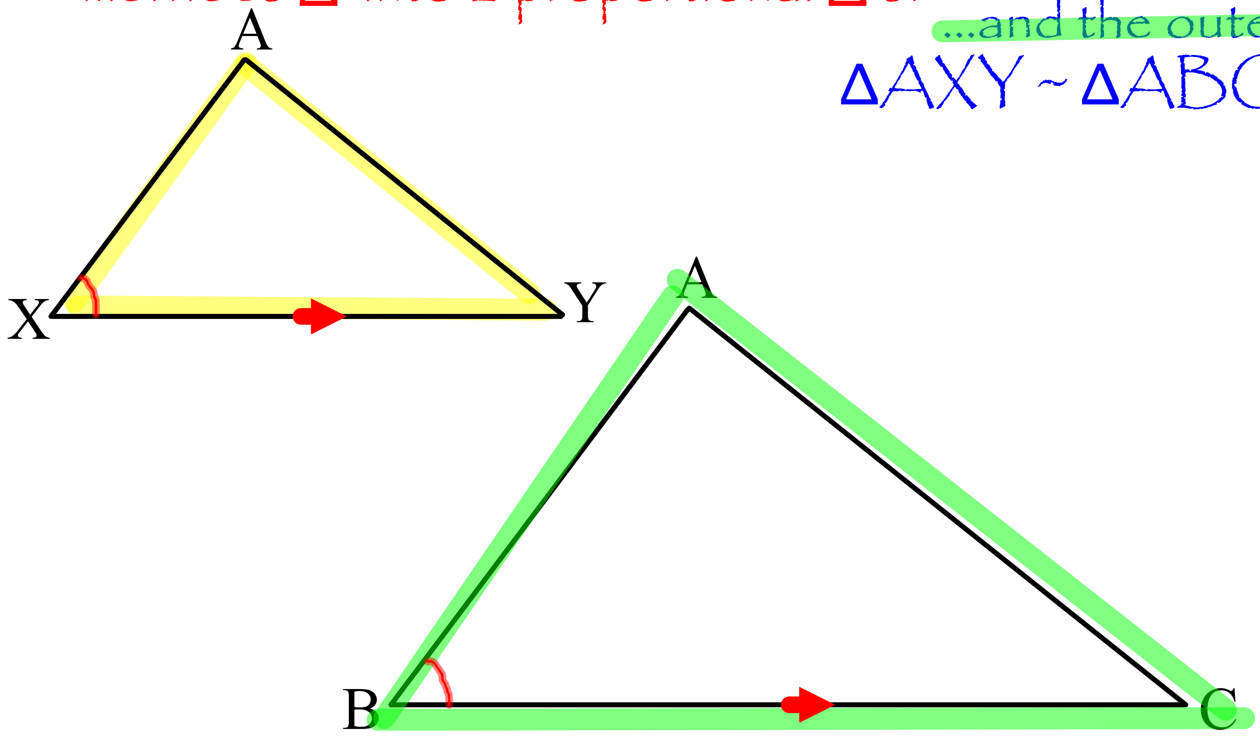

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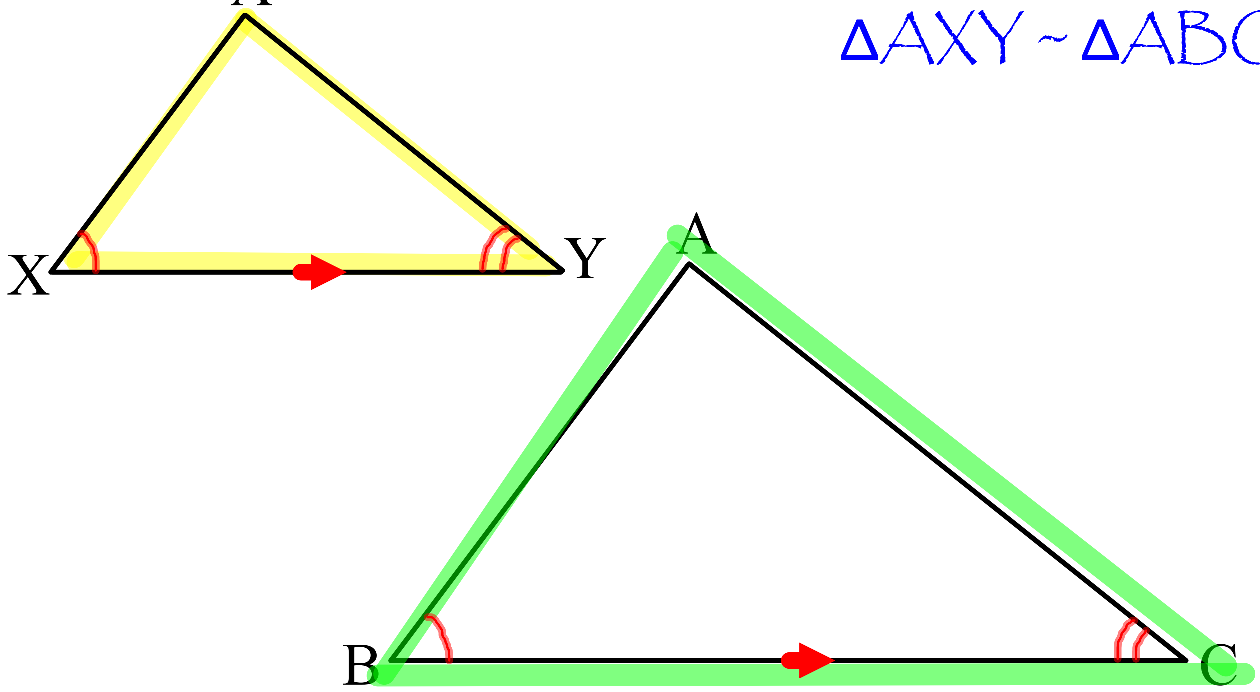

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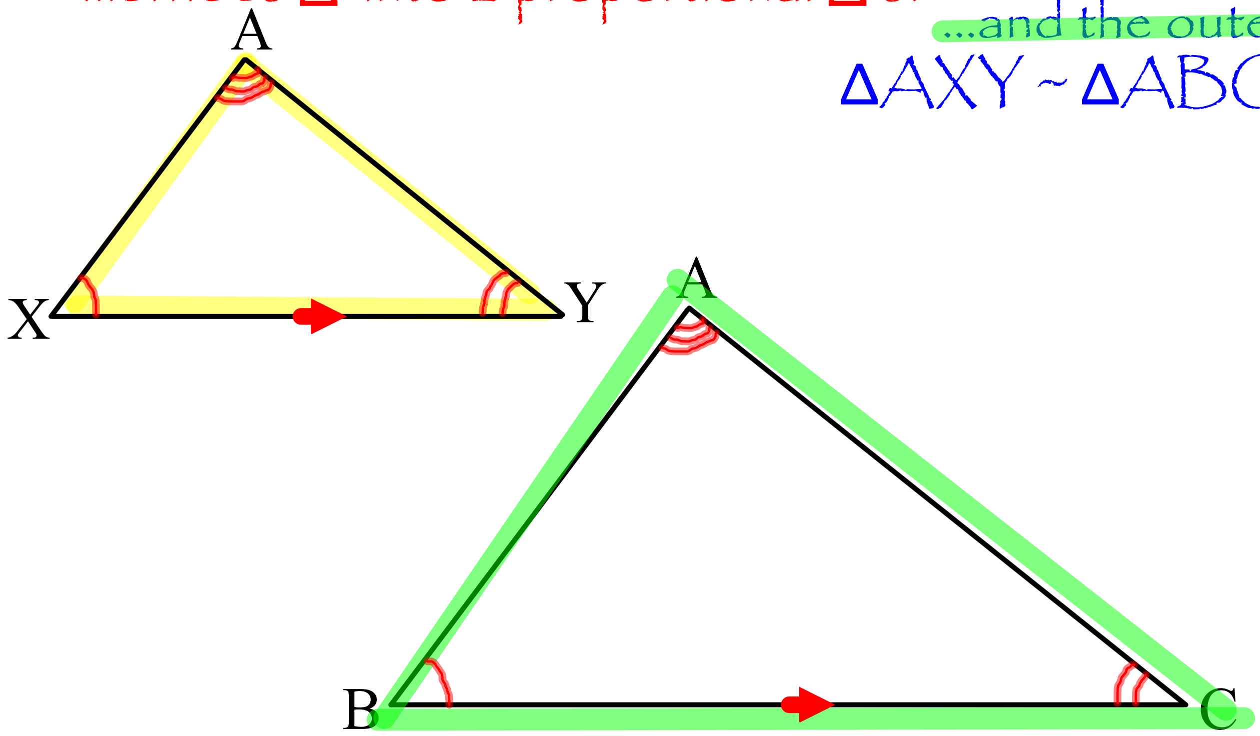

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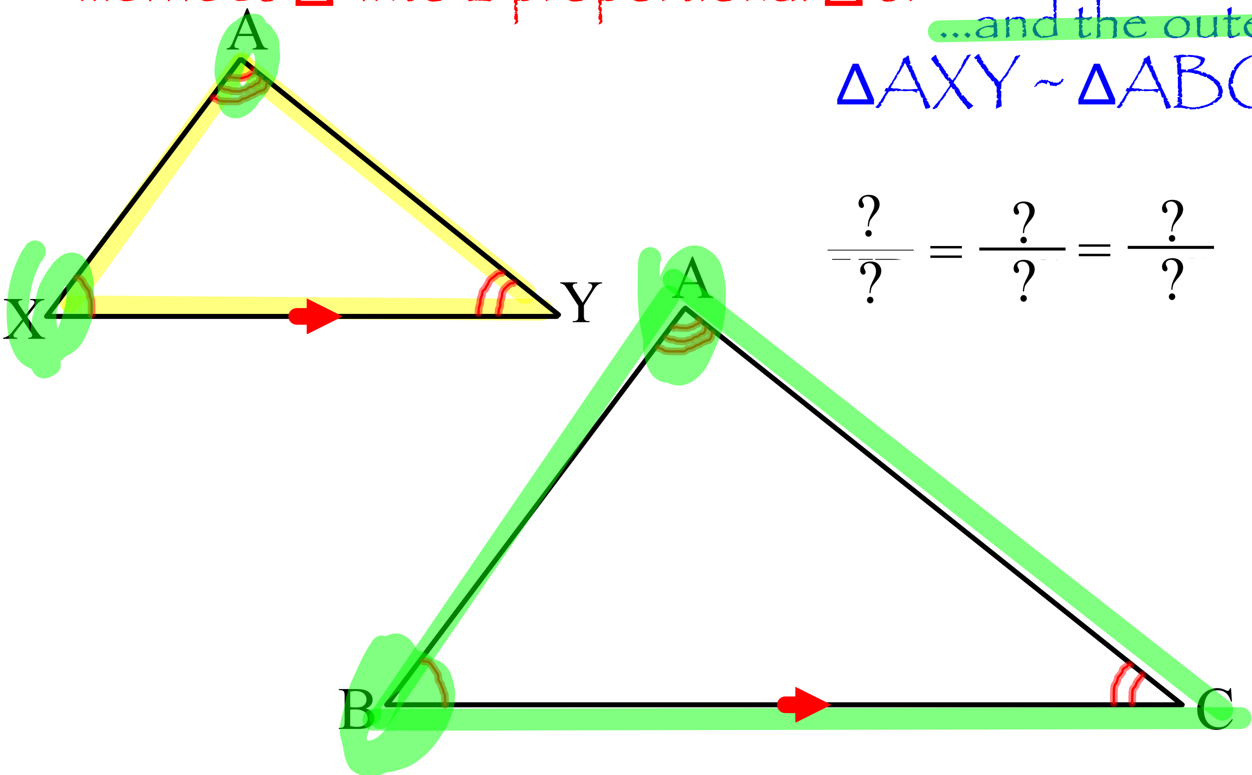

$$\frac{?}{?} = \frac{?}{?} = \frac{?}{?}$$

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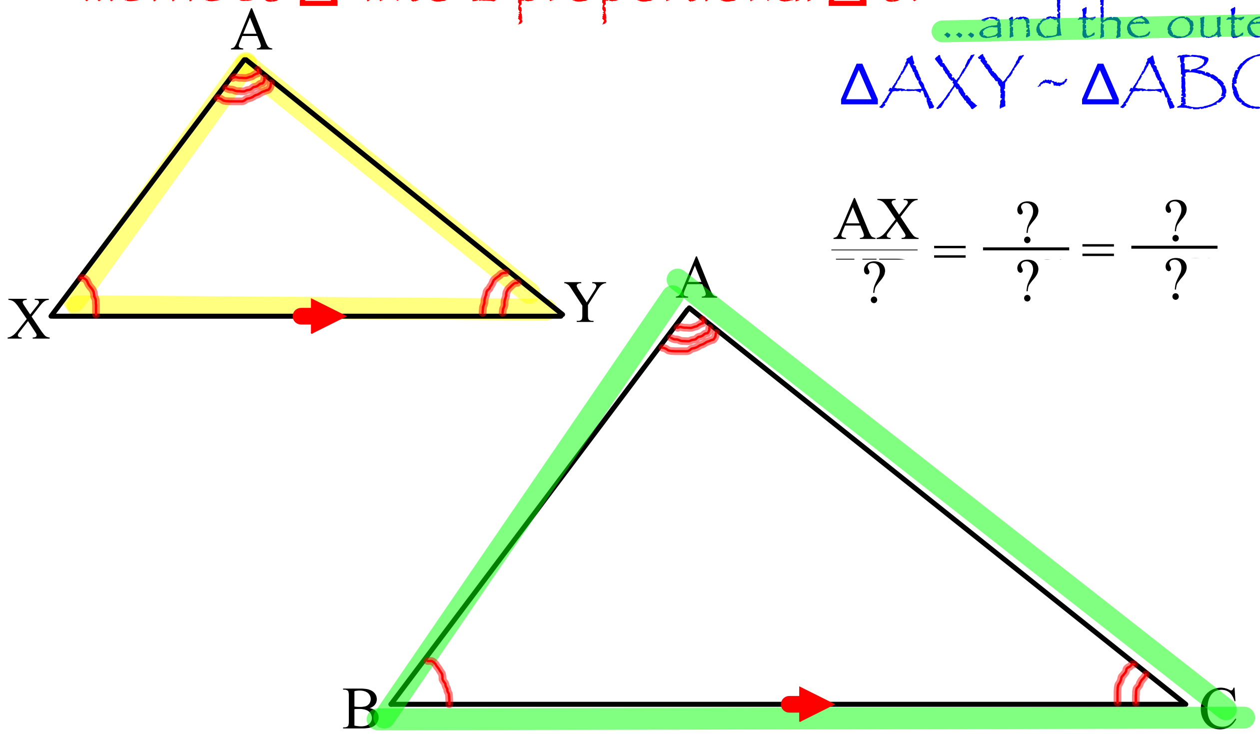

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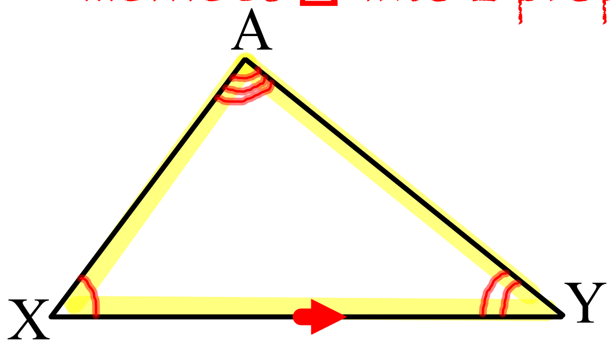

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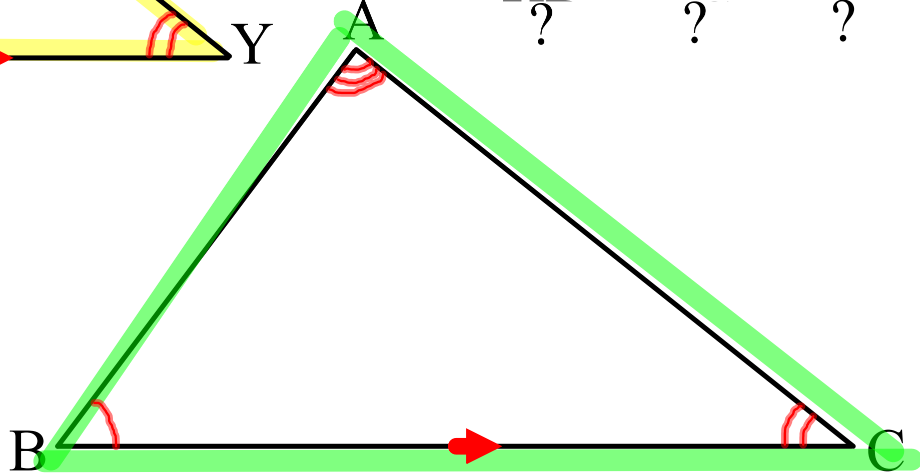

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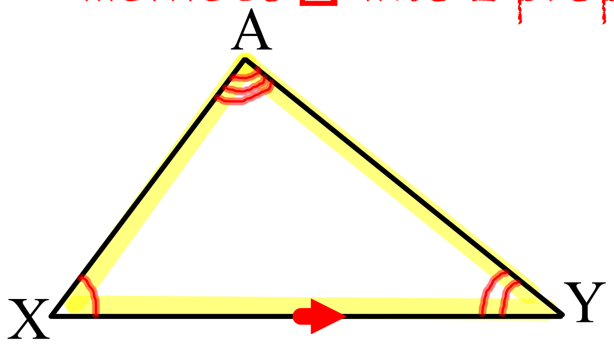

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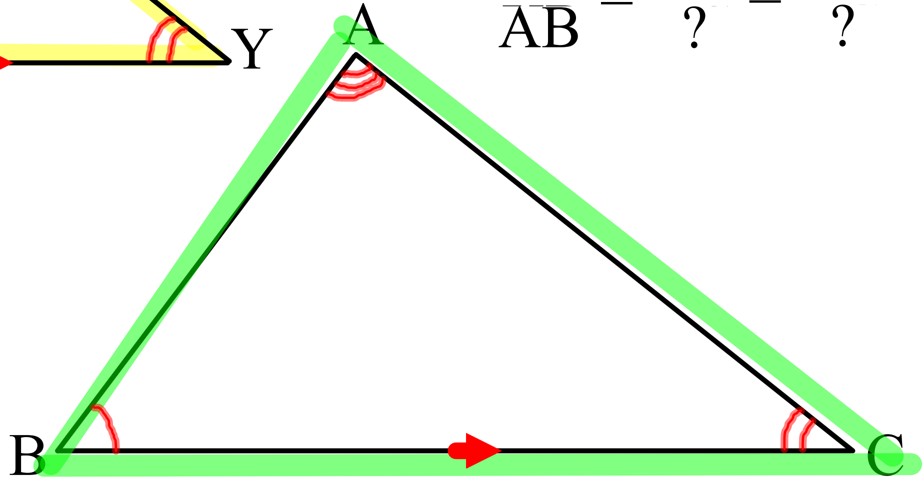

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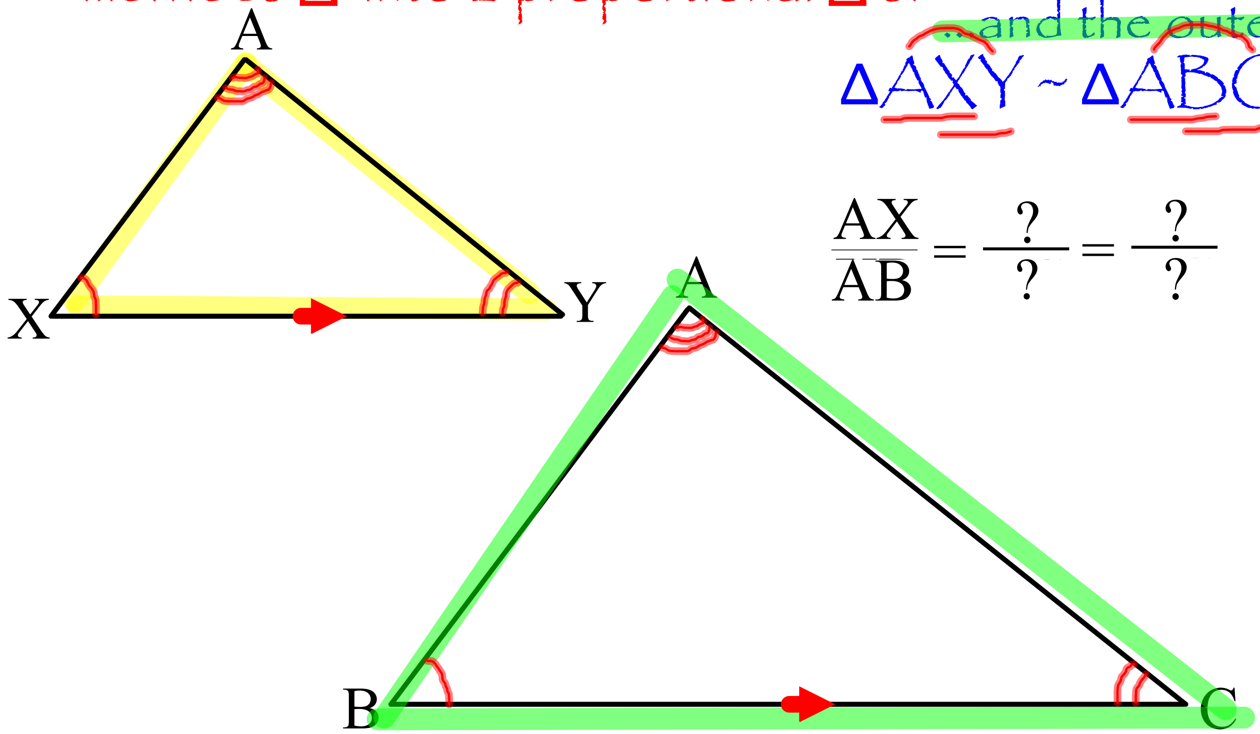

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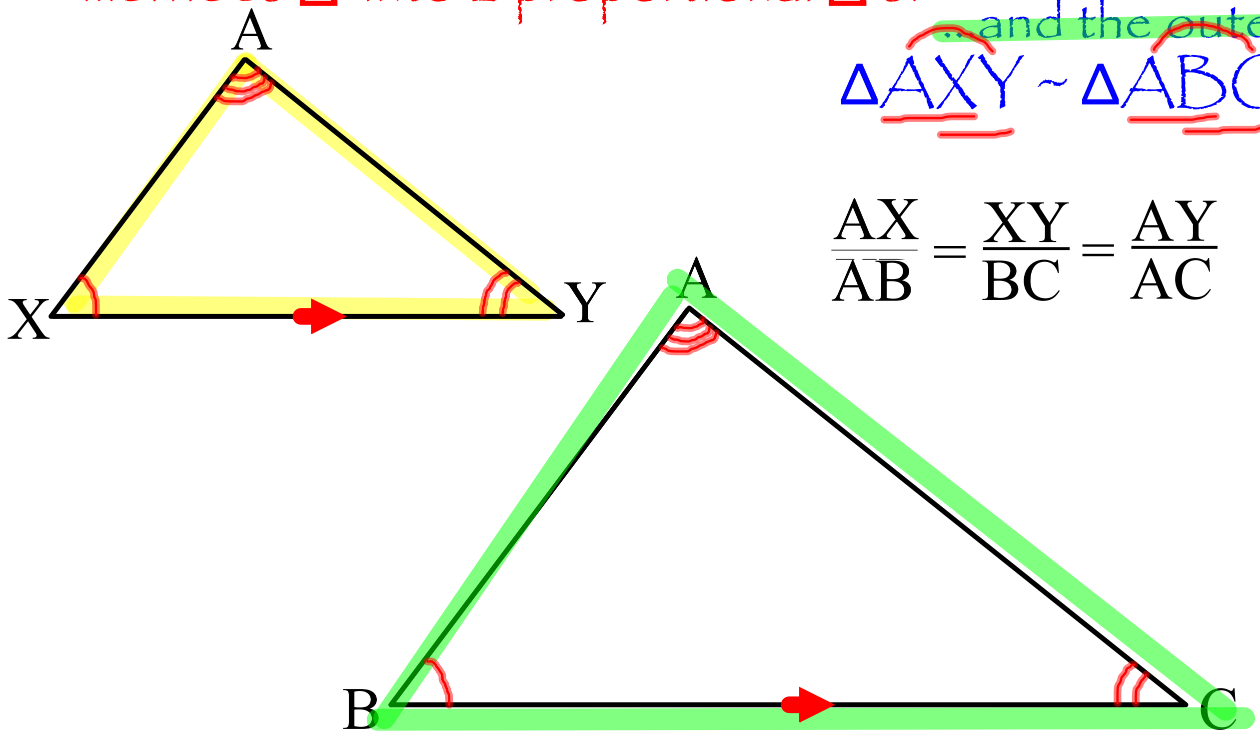
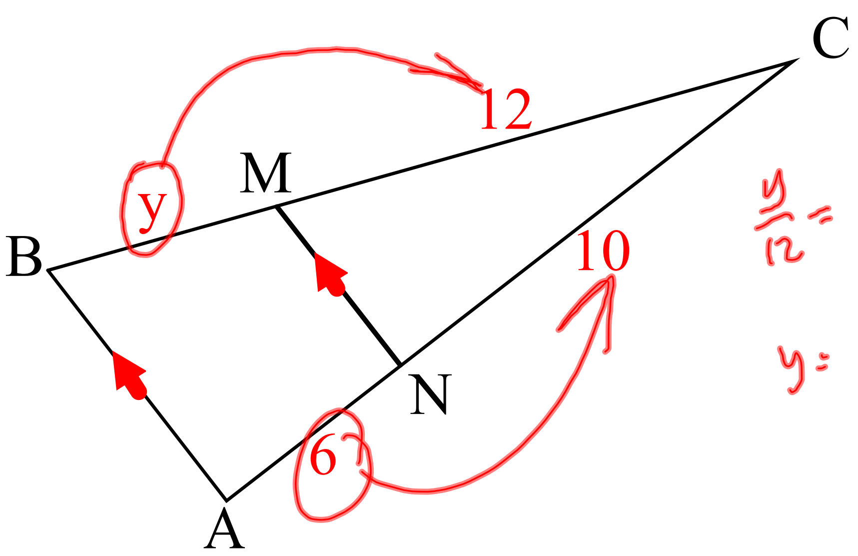


$\Delta AXY \sim \Delta ABC$

$$\frac{AX}{AB} = \frac{XY}{BC} = \frac{AY}{AC}$$

Side-Splitter Example

1) Find y.



$\frac{y}{12} = \frac{6}{10} = \frac{3}{5}$

$y = \frac{12 * 3}{5} = \frac{36}{5}$

$= 7.2$

1

Corollary to Thm 8-4

If 3 || lines intersect 2 transversals
then the transversal segments formed
by the intersecting || lines are proportional.

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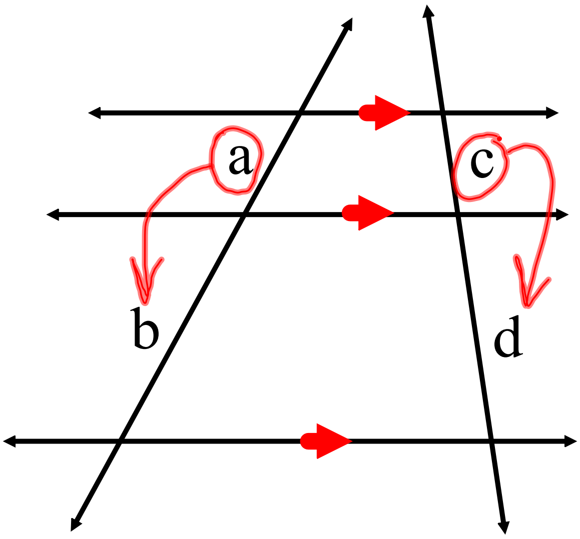

$$\frac{a}{b} = \frac{c}{d}$$

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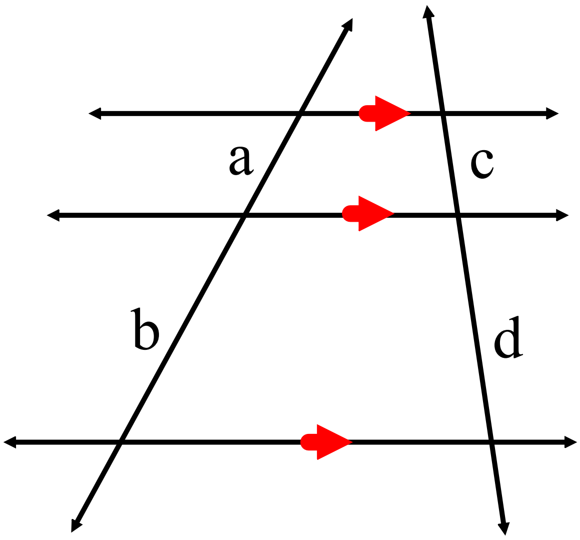

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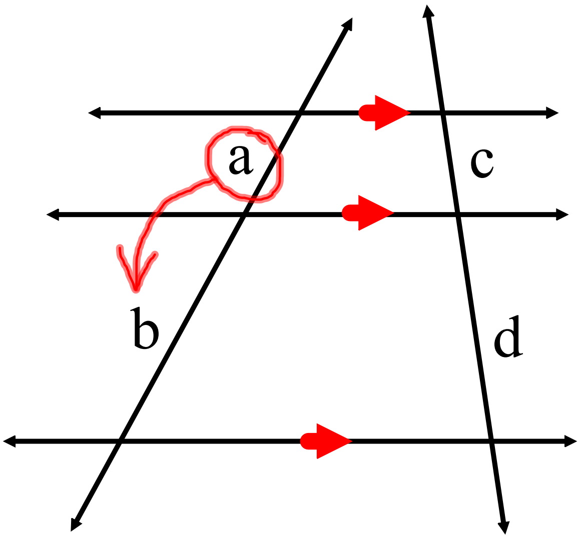

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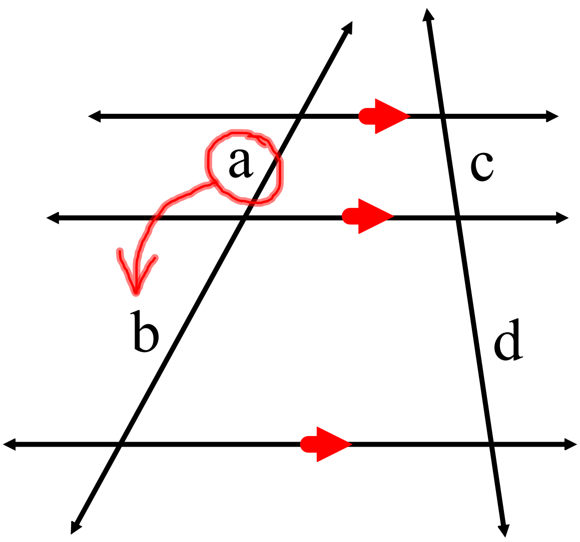

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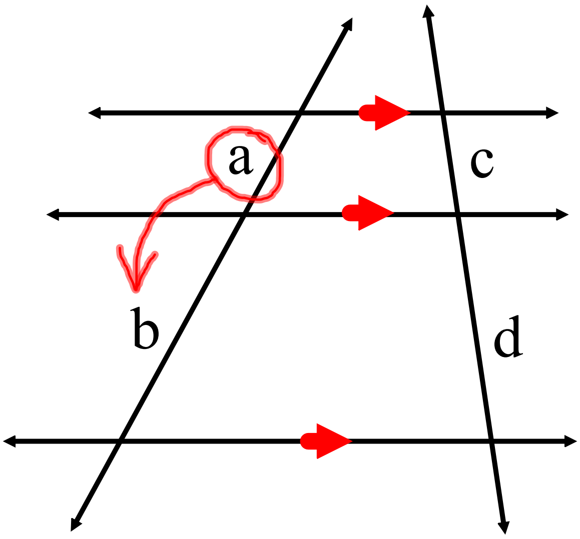

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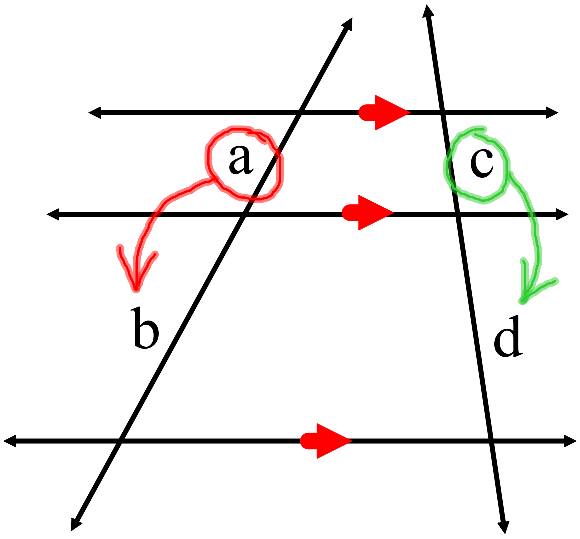

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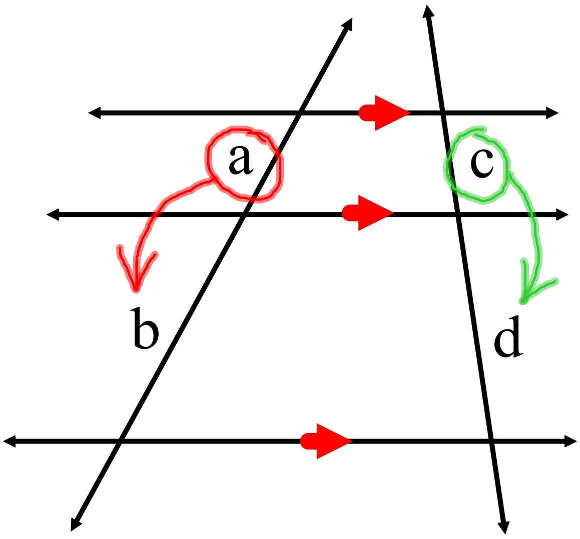


$$\frac{a}{b} = \frac{c}{d}$$


Questions
Next

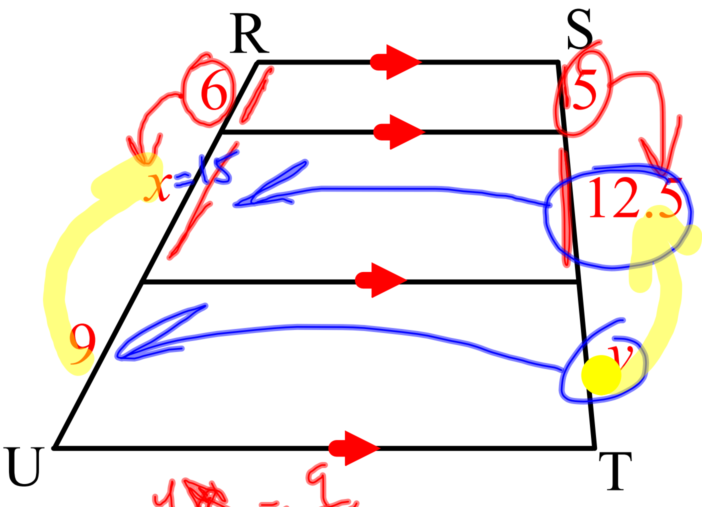
1 **Solve for x:** [redacted]

Example for Corollary to Thm 8-4

[redacted]

1) Solve for x:

2) Solve for y:



$\frac{y}{12.5} = \frac{9}{15}$ (swap)

2

$\frac{6}{x} = \frac{5}{12.5}$

$\frac{50}{125} = \frac{2}{5}$

$\frac{6}{x} = \frac{2}{5}$

$\frac{30}{2} = \frac{2x}{2}$

$x = 15$

$\frac{12.5}{15} = \frac{y}{9}$

$\frac{15y}{15} = \frac{112.5}{15}$

$y = 7.5$

back

Thm 8-5: Triangle-Angle-Bisector Theorem

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If a ray bisects an ∠ of a Δ,

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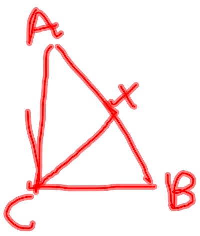

$$\frac{Ax}{AC} = \frac{xb}{bC}$$

$$\frac{AX}{XB} = \frac{AC}{CB}$$

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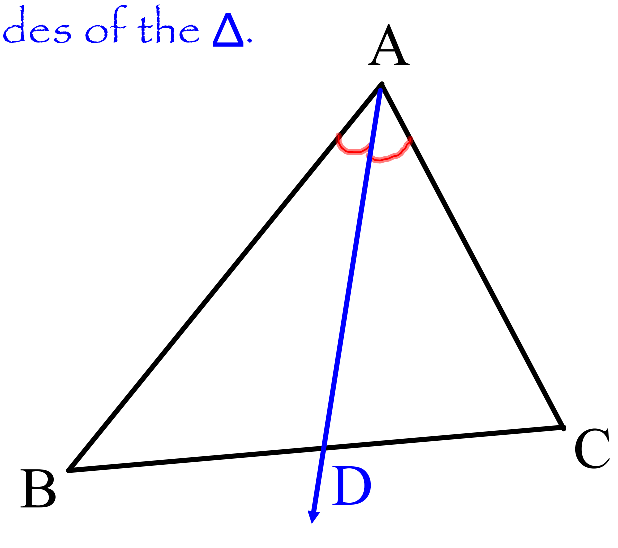

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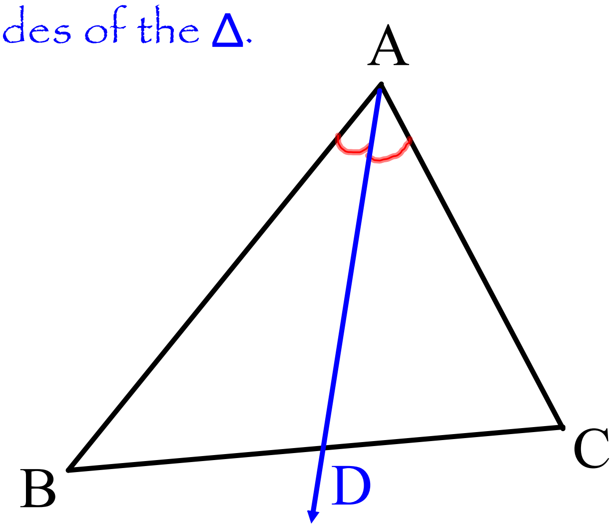

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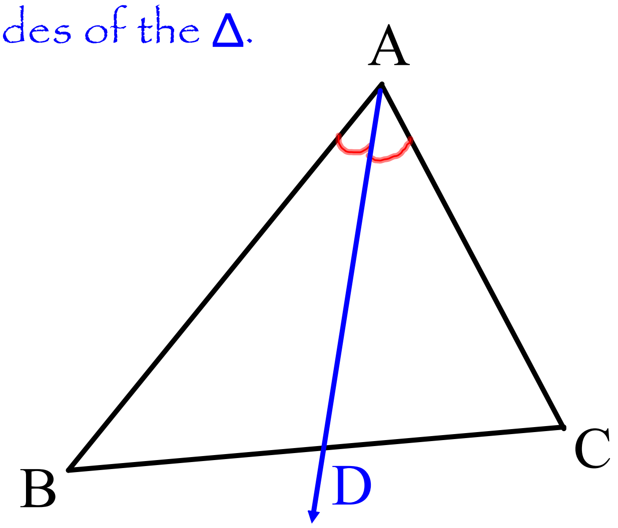

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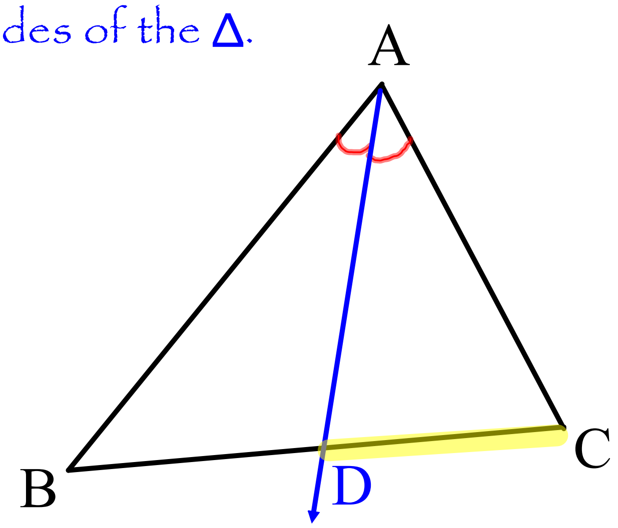

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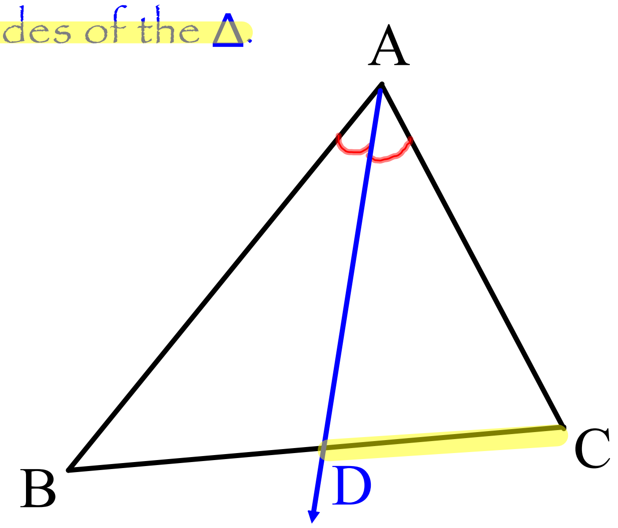

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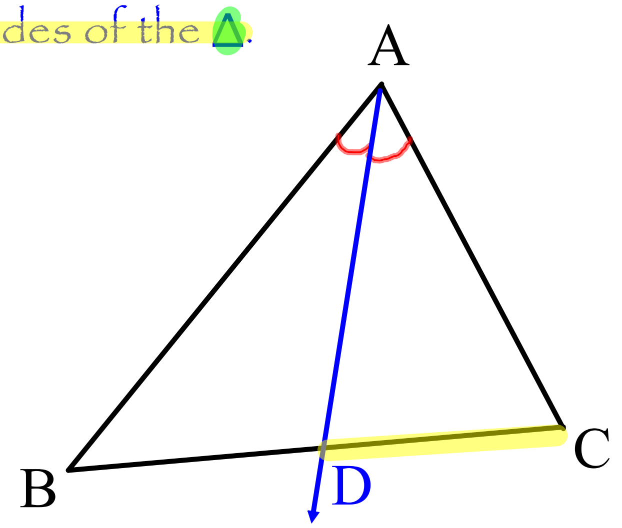

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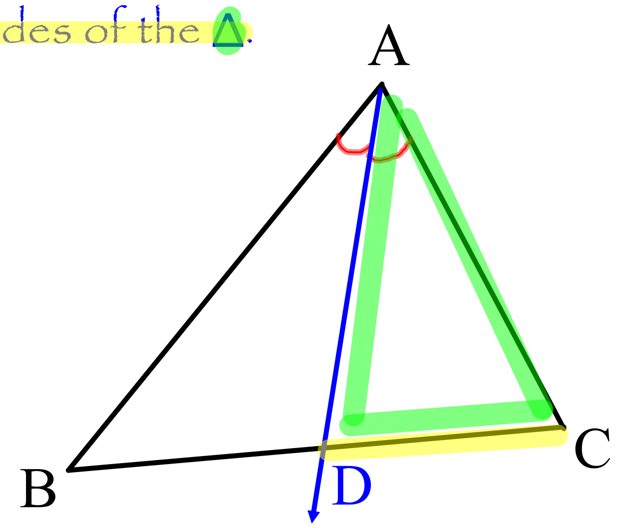
to the 2 other sides of the Δ.

$$\frac{CD}{?} = \frac{?}{?}$$



Thm 8-5: Triangle-Angle-Bisector Theorem

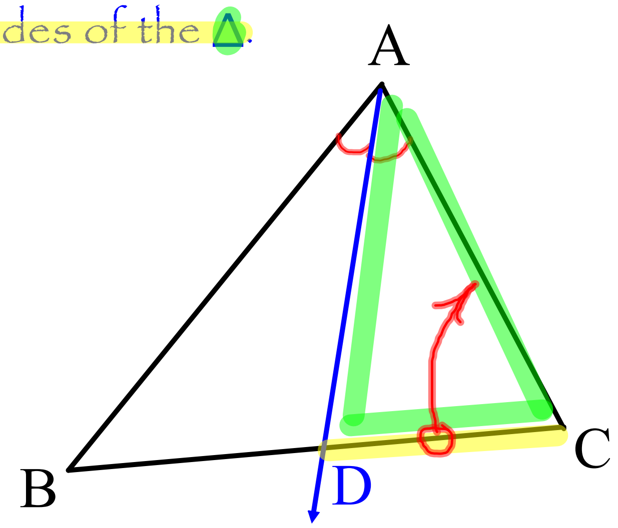
If a ray bisects an ∠ of a Δ,

then it divides the opposite side

into 2 segments that are proportional

to the 2 other sides of the Δ.

$$\frac{CD}{?} = \frac{?}{?}$$



Thm 8-5: Triangle-Angle-Bisector Theorem

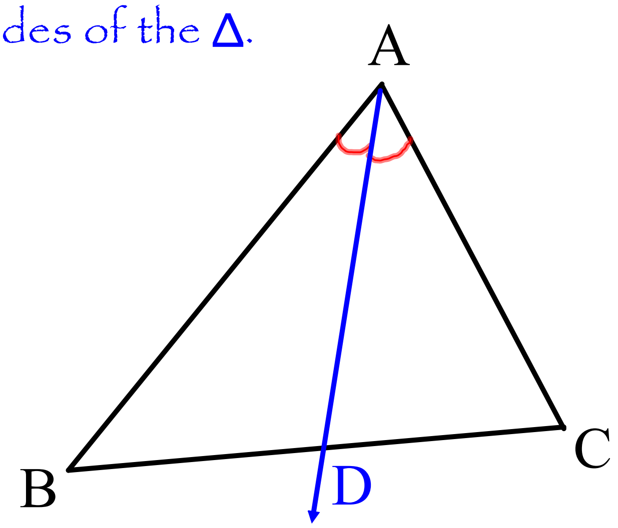
If a ray bisects an ∠ of a Δ,

then it divides the opposite side

into 2 segments that are proportional

to the 2 other sides of the Δ.

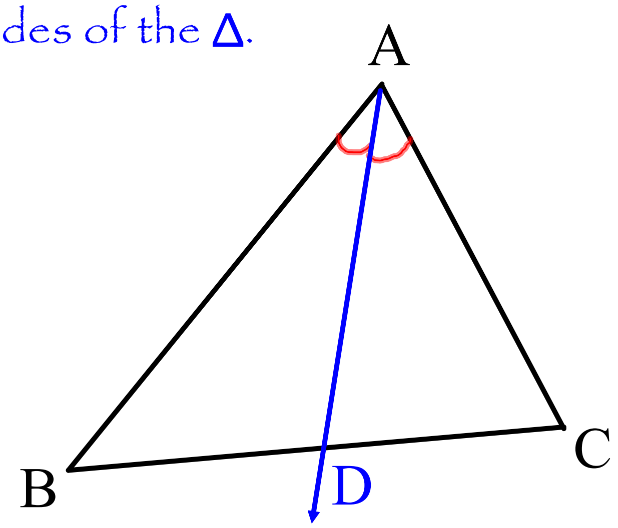
$$\frac{CD}{CA} = \frac{?}{?}$$



Thm 8-5: Triangle-Angle-Bisector Theorem

If a ray bisects an ∠ of a Δ,
then it divides the opposite side
into 2 segments that are proportional
to the 2 other sides of the Δ.

$$\frac{CD}{CA} = \frac{BD}{?}$$



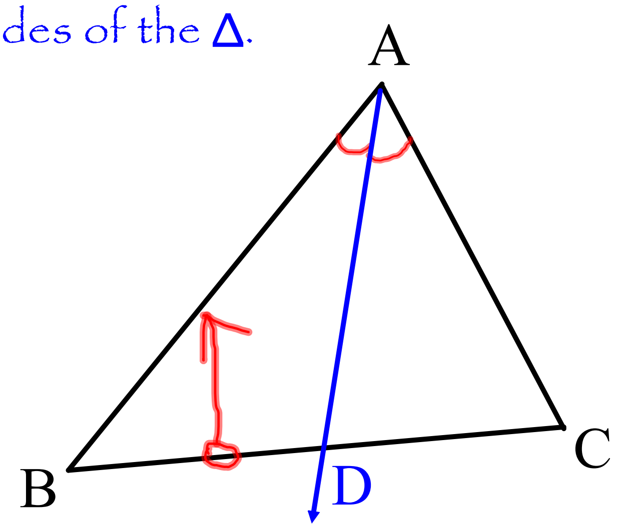
Thm 8-5: Triangle-Angle-Bisector Theorem

If a ray bisects an ∠ of a Δ,

then it divides the opposite side

into 2 segments that are proportional

to the 2 other sides of the Δ.



$$\frac{CD}{CA} = \frac{BD}{?}$$

Thm 8-5: Triangle-Angle-Bisector Theorem

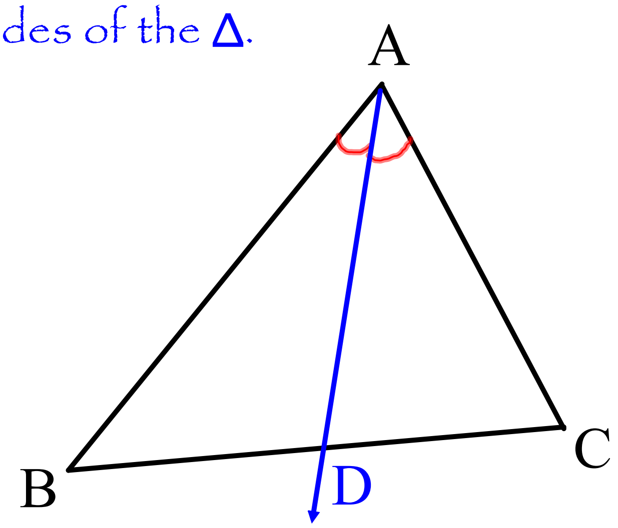
If a ray bisects an ∠ of a Δ,

then it divides the opposite side

into 2 segments that are proportional

to the 2 other sides of the Δ.

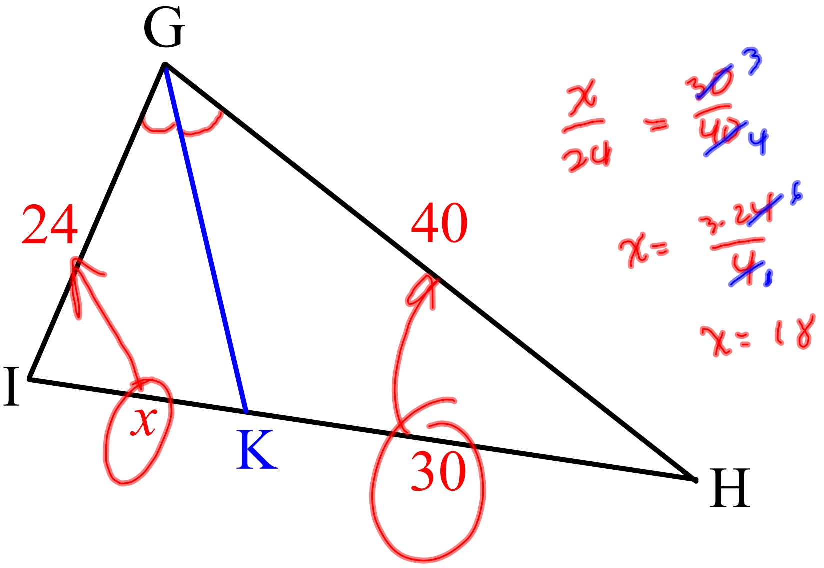
$$\frac{CD}{CA} = \frac{BD}{BA}$$



Example for Δ-∠-Bisector Thm

[redacted]

4) Find x:



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L8-5 Homework Problems

Pg 448 #1-16, 25-27, 29, 31-33, 36, 48-50