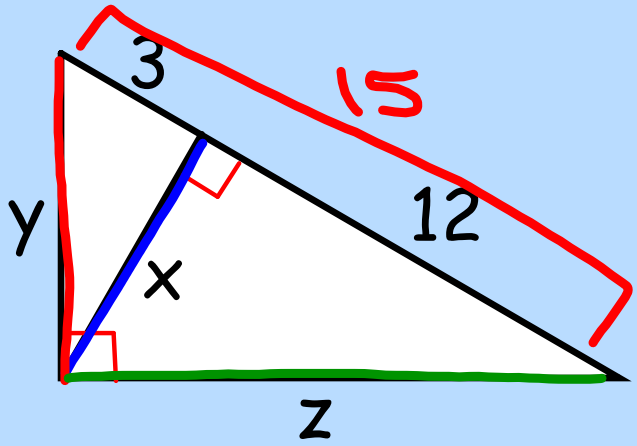
1/27/20 - Warm Up Problem

Find the value of the variables. Write your answers in simplified radical form if necessary.

$\frac{3}{x} = \frac{x}{12}$ $\quad x^2 = 36$ $\quad x = 6$

$\frac{15}{x} = \frac{x}{3}$ $\quad x^2 = 45$ $\quad x = \sqrt{9 \cdot 5}$ $\quad x = 3\sqrt{5}$

$\frac{15}{z} = \frac{z}{12}$ $\quad z^2 = 180$ $\quad z = \sqrt{9 \cdot 20}$ $\quad z = 3\sqrt{20}$ $\quad z = 3\sqrt{4 \cdot 5}$ $\quad z = 6\sqrt{5}$



Section 7.5 - Proportions in Triangles

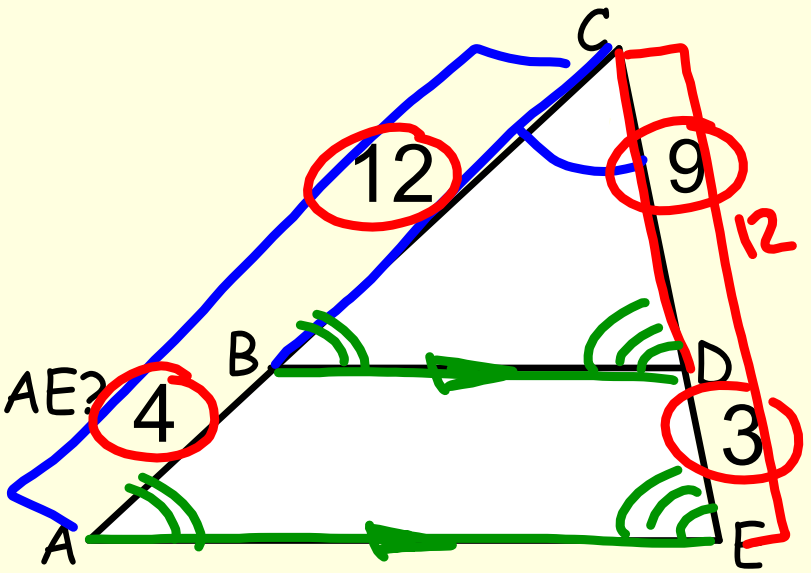
Goals: Use Triangle Proportionality Theorem and other theorems to find measures on triangles

$\Delta BCD \sim \Delta ACE$ by SAS.

What is the scale factor?

$\frac{12}{16} = \frac{3}{4}$ $\frac{9}{12} = \frac{3}{4}$

How would you describe BD and AE?

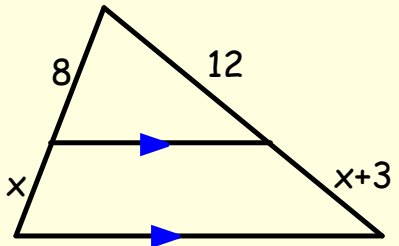


Do you notice anything about segments BC, AB, CD, and DE?

$\frac{12}{4} = 3$ $\frac{9}{3} = 3$

SIDE-SPLITTER THEOREM

If a line is parallel to one side of a triangle and intersects the other two sides, then it divides those sides proportionally.



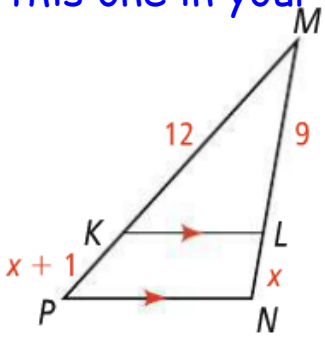
$\frac{8}{x} = \frac{12}{x+3}$

$12x = 8x + 24$

$4x = 24$

$x = 6$

Do this one in your notes.



$\frac{12}{9} = \frac{x+1}{x}$

$$\frac{x+1}{12} = \frac{x}{9}$$

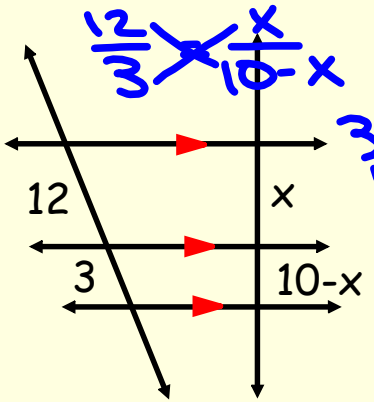
$$9x + 9 = 12x$$

$$9 = 3x$$

$$3 = x$$

COROLLARY TO THE SIDE-SPLITTER THEOREM

If three parallel lines intersect two transversals, then the segments intercepted on the transversals are proportional.



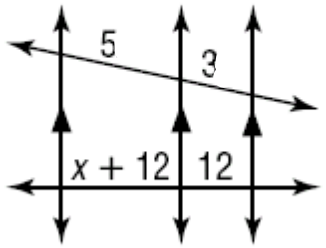
$\frac{12}{3} = \frac{x}{10-x}$

$3x = 120 - 12x$

$15x = 120$

$x = 8$

Do this one in your notes.



$\frac{5}{3} = \frac{x+12}{12}$

$$\frac{5}{x+12} = \frac{3}{12}$$

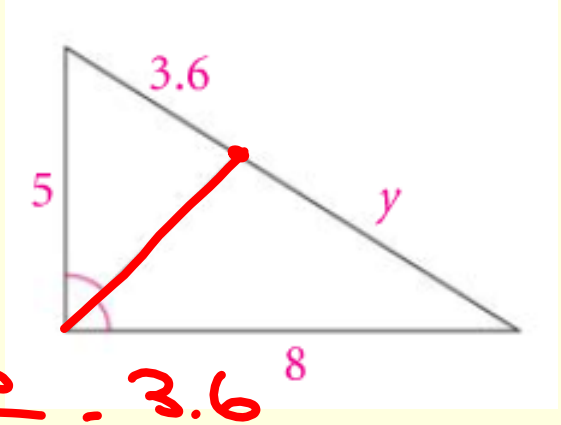
$$60 = 3x + 36$$

$$24 = 3x$$

$$8 = x$$

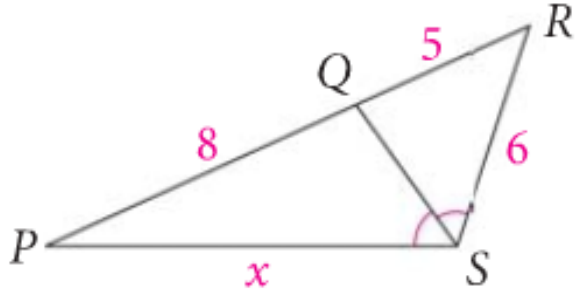
TRIANGLE-ANGLE-BISECTOR THEOREM

If a ray bisects an angle of a triangle, then it divides the opposite side into two segments that are proportional to the other two sides of the triangle.



$\frac{8}{5} = \frac{3.6}{y}$

Do this example in your notes.



$\frac{8}{x} = \frac{5}{6}$

$\frac{8}{x} = \frac{6}{5}$

$48 = 5x$

$x = 9.6$

Assignment:

Math XL

Concept 18 Assignment

- change your course registration if you were in a different period last semester