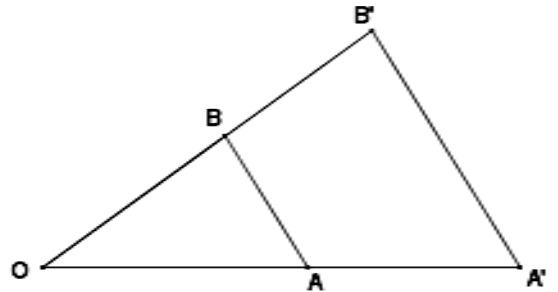


Name _____ Per _____

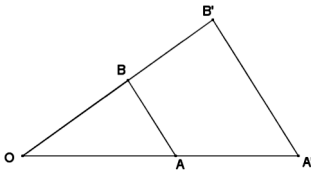
LO: I can show how the ratio method and parallel lines lead to the side splitter theorem. I can use and explain the side splitter theorem.

☐ DO NOW On the back of this packet☐ (1)
ruler and
setsquare**Side Splitter Theorem**☐ (a) Read the statement of the side splitter and use the diagram to make sense of it. Complete the steps below to help you.**Restatement of the triangle side splitter theorem:**

In $\triangle OA'B'$, \overline{AB} splits the sides proportionally (i.e., $\frac{OA'}{OA} = \frac{OB'}{OB}$)
if and only if $\overline{A'B'} \parallel \overline{AB}$.

☐ (b) Trace the “side splitter” in the diagram above with a highlighter. (Hint, which segment “splits” or divides sides of a triangle into smaller segments?)☐ (c) The side splitter (segment _____) is **parallel** to segment _____.☐ (d) Because a side splitter results in a scale drawing:

$$\frac{OA'}{OA} = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

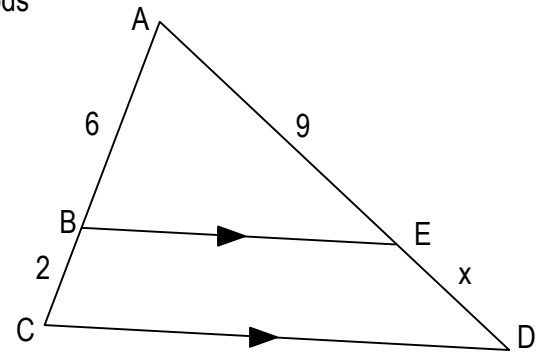
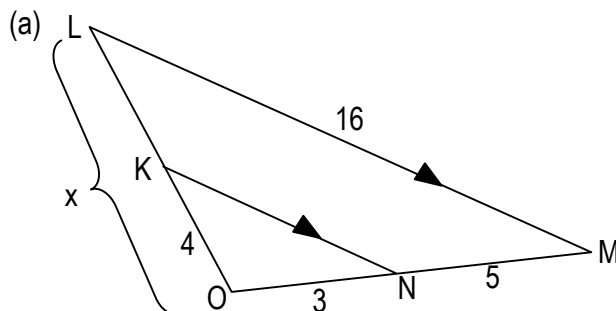
☐ (e) We can also write the proportions below:

☐ (2) **Side Splitter Theorem**

highlighter

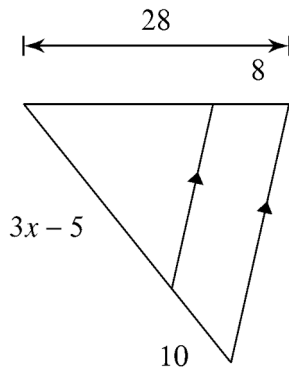
Lesson Summary

THE TRIANGLE SIDE SPLITTER THEOREM: A line segment splits two sides of a triangle proportionally if and only if it is parallel to the third side.

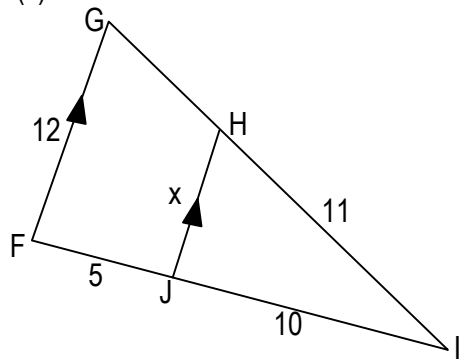
☐ (3) **Side Splitter Theorem:** Find the measure of x by 2 different methods
Method 1Method 2
☐ (4) **Side Splitter Theorem:** Find the measure of x for each diagram


□ (4) **Side Splitter Theorem:** Find the measure of x for each diagram

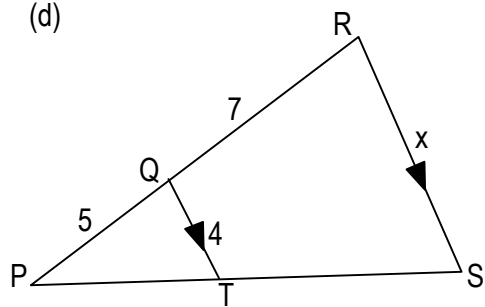
(b)



(c)



(d)



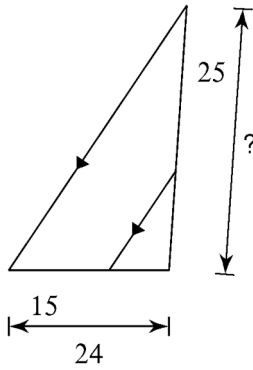
☐ (7) **Exit Ticket**

ON THE LAST PAGE

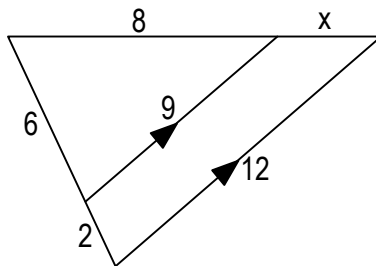
☐ (8) **Homework:**

compass,
straightedge

☐ (1) Find the measure of the segment with the question mark.



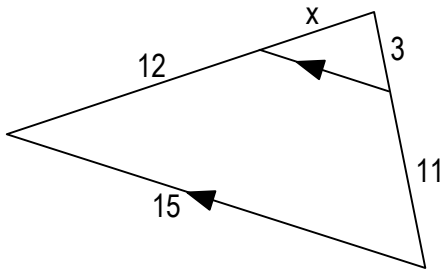
☐ (2) Find the value of x .



☐ (8) compass,
straightedge

Homework:

☐ (3) Find the value of x .

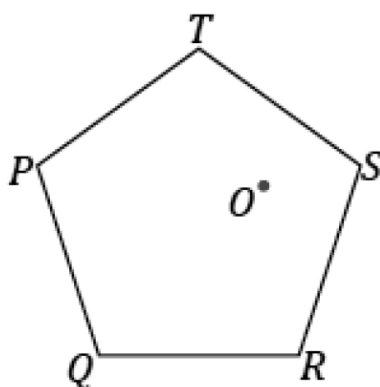


☐ (4) (a) Construct equilateral triangle HOP.
(b) Bisect angle O

☐ (8) **Homework:**

compass,
straightedge

☐ (5) Use the ratio method to construct a scale drawing of PQRST from center O with scale factor $r = \frac{5}{2}$

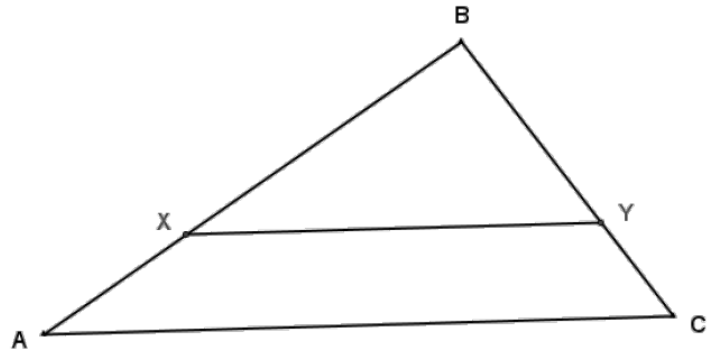


Exit Ticket Name _____ Date _____ Per _____ 11.3L

(1) The LO (Learning Outcomes) are written below your name on the front of this packet. Demonstrate your achievement of these outcomes by doing the following: READ AND LABEL CAREFULLY!

In the diagram, $\overline{XY} \parallel \overline{AC}$. Use the diagram to answer the following:

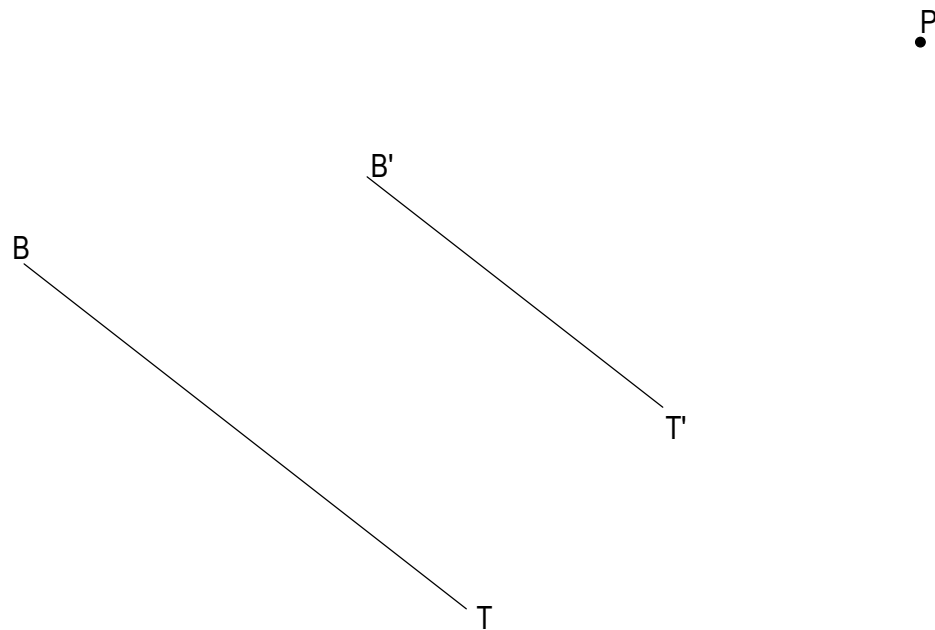
1. If $BX = 4$, $BA = 5$, and $BY = 6$, what is BC ?



Not drawn to scale

Bonus point: If $BX = 9$, $BA = 15$, and $BY = 15$, what is YC ?

- (1) Autumn thinks she has made a scale drawing of triangle BT from center P with scale factor $r = \frac{3}{2}$. Explain what she did correctly and incorrectly by comparing ratios of corresponding sides and showing that P is or is not the center.



- (2) When things are **proportional** they have equal ratios. Use a calculator (or simplify) to verify that the values are **proportional** as the equation suggests.

$$\frac{10}{15} = \frac{2}{3} = \frac{18}{27}$$

- (3) In the 3D sketch of a person standing on train tracks at right, what 2 things do you notice about the railroad ties (the pieces connecting the rails)?

