

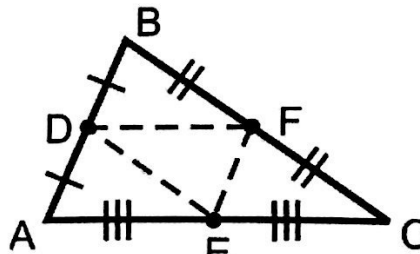
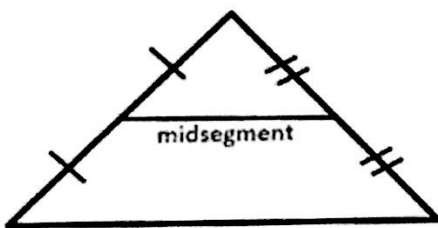
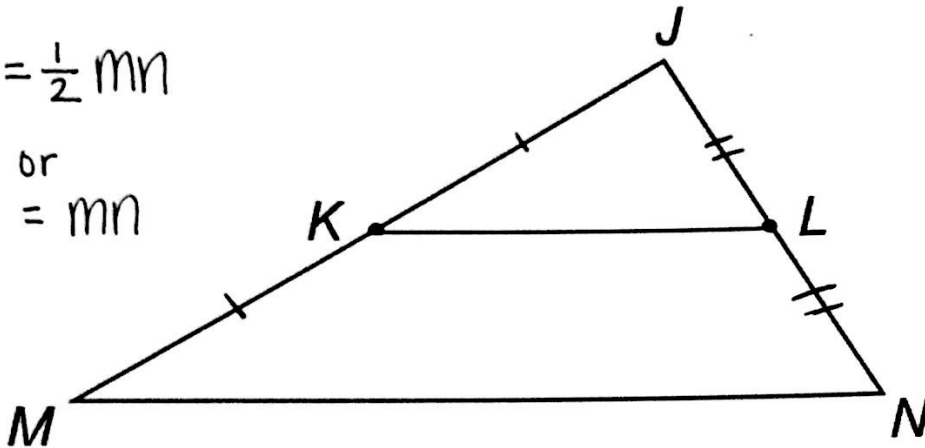
Day 1 – Segment Relationships in Triangles Notes

A **midsegment** of a triangle is a segment that joins the midpoints of two sides of the triangle. Every triangle has three midsegments, which forms the midsegment triangle.

Triangle Midsegment Theorem: A midsegment of a triangle is parallel to a side of the triangle, and its length is half the length of that side.

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

or
 $2KL = MN$



Midsegments: \overline{DF} , \overline{DE} , \overline{EF}

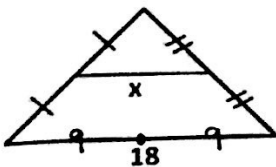
Midsegment Triangle: $\triangle DEF$

The Midsegment is:

- Parallel to one side of the triangle
- Is half the length of the parallel side
- Connects to the midpoints

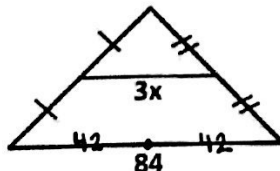
Practice:

A. Solve for x:



$$x = 9$$

B. Solve for x:

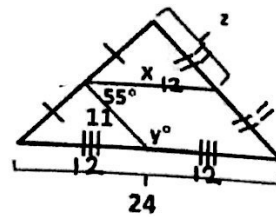


$$3x = \frac{1}{2}(84)$$

$$3x = 42$$

$$x = 14$$

C. Solve for x, y, and z:

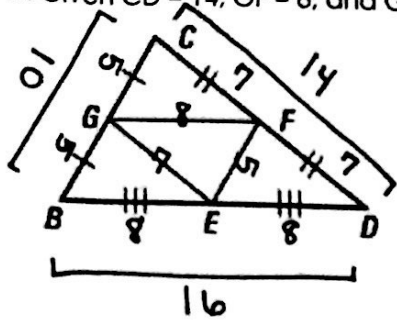


$$x = 12$$

$$y = 125^\circ \text{ (same side interior)}$$

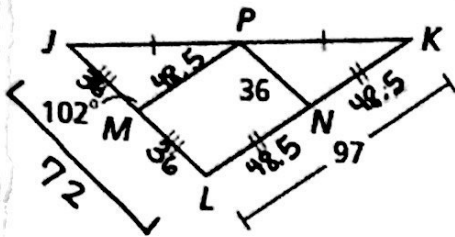
$$z = 11$$

D. Given $CD = 14$, $GF = 8$, and $GC = 5$. Find the perimeter of $\triangle BCD$.



$$\begin{aligned} \text{Perimeter of } \triangle BCD &= 14 + 16 + 10 \\ &= 40 \end{aligned}$$

E. Find the measure of the following



$$\overline{JL} = 72$$

$$\overline{PM} = 48.5$$

$$\angle MLK = 102^\circ \text{ (corresponding angles)}$$