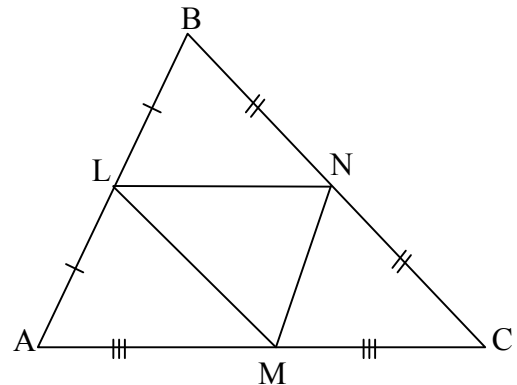Name: _____ Date: _____

Triangle Midsegment and Proportionality Theorem

Triangle Midsegment Theorem: The segment connecting the midpoints of two sides of the triangle is parallel to the third side and half the length of the third side.
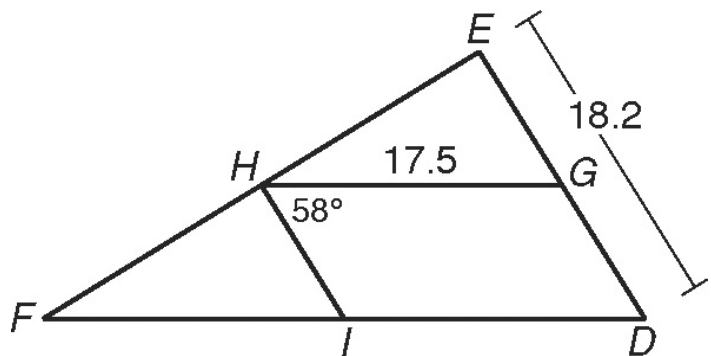
Use △ABC, where L, M, and N are midpoints of the sides.

1. $\overline{LM}\,\|$ _____

2. $\overline{AB}\,\|$ _____

3. If AC = 20, then LN = _____

4. If MN = 7, then AB = _____

5. If NC = 9, then LM = _____

6. If LM = 3x + 7, and BC = 7x + 6, then **LM** = _____

7. If MN = x – 1, and AB = 6x – 1, then **AB** = _____
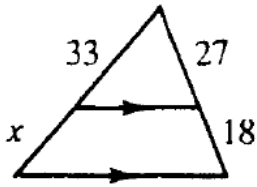
8. **Find each measure. H, G, and I are all midpoints.**

     a) HI _____   b) DF _____

     c) GE _____   d) m∠HIF_____

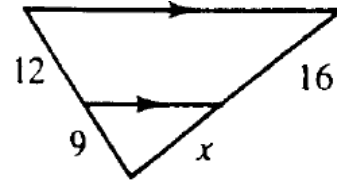   e) m∠HGD_____   f) m∠D_____

<u>Triangle Proportionality Theorem</u>: If a line parallel to one side of a triangle intersects the other two sides, then it divides the two sides proportionally.
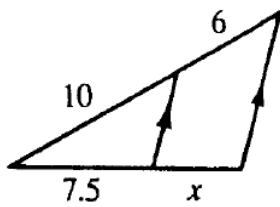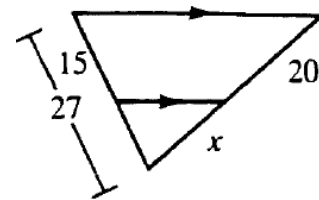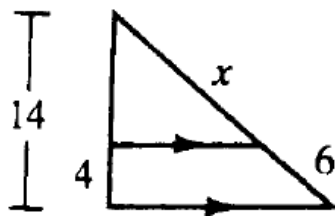
Find the value of x:

9.

10.

11.

12.

13.

14.