Chapter 5 Final Review Extra Problems
(Answers provided in next class session)

1. What is the hypothesis of the Triangle Midsegment Theorem?

   If a segment connects the midpoints of two sides of a triangle…

2. What two conclusions can you draw if the hypothesis of the Triangle Midsegment Theorem is true?

   Then
   1) the midsegment is parallel to the opposite (3^{rd}) side
   2) the midsegment is half the length of the opposite (3^{rd}) side

3. Given two sides of a triangle, $AB = 6$ and $BC = 10$, what is the range of possible values for side AC?

   $4 < AC < 16$

4. How does Theorem 5-12 apply to problem #3?

   $AB + BC > AC \rightarrow 6 + 10 > AC \rightarrow \mathbf{16 > AC}$

   $AB + AC > BC \rightarrow 6 + AC > 10 \rightarrow \mathbf{AC > 4}$ **(subtract 4 from each side)**

   $AC + BC > AB \rightarrow AC + 10 > 6$

5. ΔABC has midsegment MN such that M bisects $\overline{AB}$ and N bisects $\overline{AC}$. $AB = 12$, MN = 12 and $NC = 8$. What is the perimeter of ΔABC?

   $AB = 12$
   $AC = 8 + 8 = 16$
   $BC = 2 * MN = 2 * 12 = 24$
   Perimeter = 12 + 16 + 24 = 52

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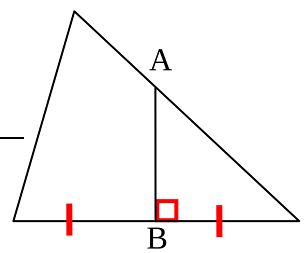
6. How can you use Theorem 5-10 to tell which angle of a triangle is the smallest?

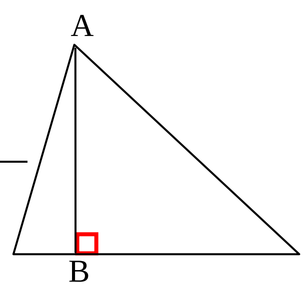
The smallest angle is opposite the shortest side.

7. For each picture, note the letter corresponding to the correct definition for $\overline{AB}$:

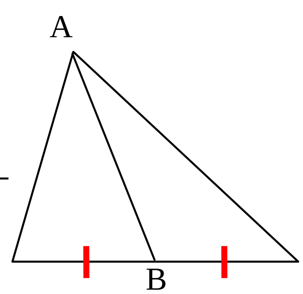
___E______



____B____



____A___



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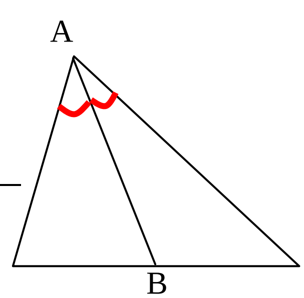

a) Median

b) Altitude

c) Segment

d) Angle Bisector

e) Perpendicular Bisector

f) Triangle Midsegment

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8. Classify the point of concurrency for the following as *inside*, *outside* or *on* the triangle:

a) Obtuse triangle, perpendicular bisectors ____________

out

b) Obtuse triangle, medians ____________

in

c) Acute triangle, angle bisectors ____________

in

d) Right triangle, altitudes ____________

on