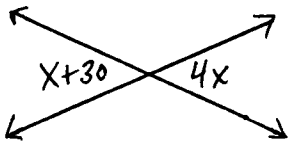
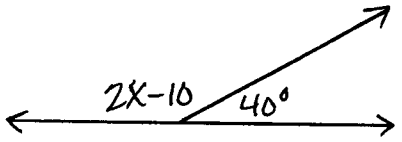
REVIEW PROBLEMS
(Chapter 2)

1. State the hypothesis, conclusion and converse of the following statement: "If the street lights are on then the sun has set"

2. Write the inverse and contrapositive of the following: "If I am a freshman then I am not a sophomore"

3. State the property used:
   a. $\angle QPR \cong \angle QPR$
   b. If $AE = EG$ and $EG = IJ$ then $AE = IJ$
   c. If $m\angle AOD = 45°$ then $m\angle AOD + 50° = 95°$

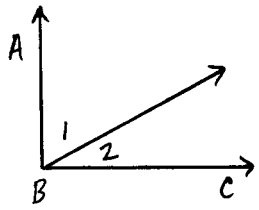
4. Find x:
   a. 

   b. 

5. Let $m\angle A = 4x$ and $m\angle B = x + 40$. If $\angle A$ and $\angle B$ are complements then find x and the measures of $\angle A$ and $\angle B$.

6. $\angle 1$ is twice as large as its supplement $\angle 2$. Find the measure of each angle

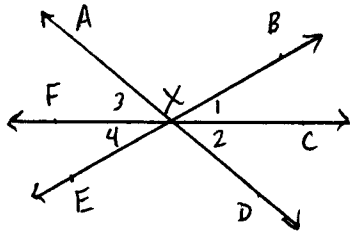
FILL IN THE MISSING REASONS:

7. 

Given $\angle 1$ and $\angle 2$ are comp $\angle$s

Prove $\overrightarrow{AB} \perp \overrightarrow{BC}$

1. $\angle 1$ and $\angle 2$ are comp $\angle$s	1.
2. $m\angle 1 + m\angle 2 = 90°$	2.
3. $m\angle 1 + m\angle 2 = m\angle ABC$	3.
4. $m\angle ABC = 90°$	4.
5. $\angle ABC$ is a right $\angle$	5.
6. $\overrightarrow{AB} \perp \overrightarrow{BC}$	6.

8. 

Given $\angle 1 \cong \angle 2$

Prove $\overrightarrow{XF}$ bisects $\angle AXE$

1. $\angle 1 \cong \angle 4$, $\angle 2 \cong \angle 3$	1.
2. $\angle 1 \cong \angle 2$	2.
3. $\angle 4 \cong \angle 3$	3.
4. $\overrightarrow{XF}$ bisects $\angle AXE$	4.

IF A(-2, 4) AND B(-6, 6), FIND:

9. The midpoint of $\overline{AB}$

10. The length of $\overline{AB}$

★ ANSWERS ★

1. Hypothesis - The street lights are on
   Conclusion - The sun has set
   Converse - If the sun has set then the street lights are on

2. Inverse - If I am not a freshman then I am a sophomore
   Contrapositive - If I am a sophomore then I am not a freshman

3- a) Reflexive Prop b) Substitution Prop c) Addition Prop

4- a) $X = 10$
   b) $X = 75$

5. $X = 10$
   $m\angle A = 40°$ $m\angle B = 50°$

6. $m\angle 1 = 120°$
   $m\angle 2 = 60°$

7-
1. Given
2. Def of comp $\angle$s
3. $\angle$ Add Post
4. Substitution Prop
5. Def of right $\angle$s
6. Def $\perp$ (converse)

8-
1. Vert $\angle$s $\cong$
2. Given
3. Substitution Prop
4. Def $\angle$ Bisector (converse)

9. Midpoint = $(-4, 5)$

10. $AB = \sqrt{20} \approx 4.5$