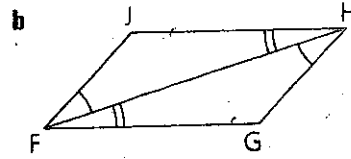
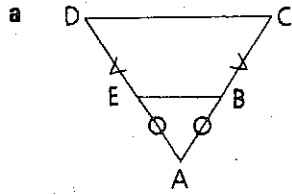


# Part Three: Problem Sets

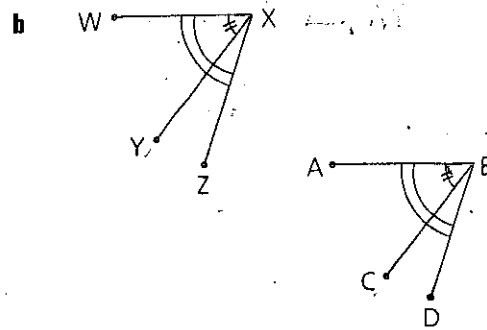
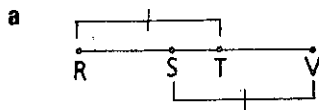
## Problem Set A

Throughout this problem set, think of addition when you are asked to prove that segments or angles are larger than the given segments or angles. Think of subtraction when you are asked to prove that segments or angles are smaller than the given segments or angles.

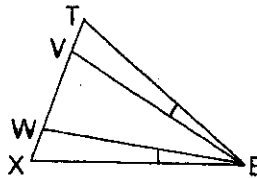
- 1 Name the angles or segments that are congruent by the Addition Property.



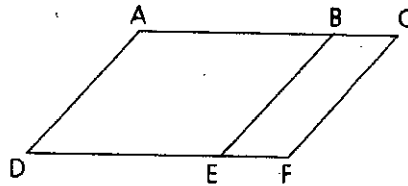
- 2 Name the angles or segments that are congruent by the Subtraction Property.



- 4 Given:  $\angle TEV \cong \angle XEW$   
 Prove:  $\angle TEW \cong \angle XEV$

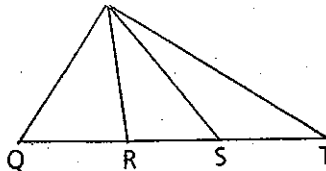


- 5 Given:  $\overline{AC} \cong \overline{DF}$ ,  
 $\overline{BC} \cong \overline{EF}$   
 Prove:  $\overline{AB} \cong \overline{DE}$



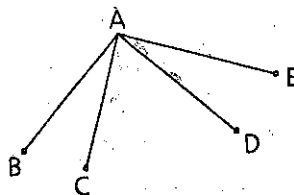
$$RT = 10 - 2x, RS = 3$$

Find: QS and QT



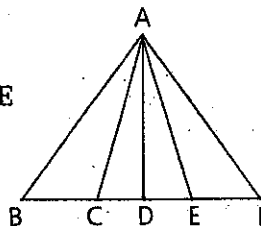
- 10 Given:  $\angle BAD$  is a right  $\angle$ .  
 $\overline{CA} \perp \overline{AE}$

Prove:  $\angle BAC \cong \angle EAD$



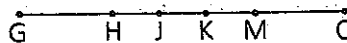
### Problem Set B

- 11 Given:  $\angle BAD \cong \angle FAD$ ;  
 $\overrightarrow{AD}$  bisects  $\angle CAE$ .  
 Conclusion:  $\angle BAC \cong \angle FAE$



- 12 Given: J and K are trisection  
 points of  $\overline{HM}$ .  
 $\overline{GH} \cong \overline{MO}$

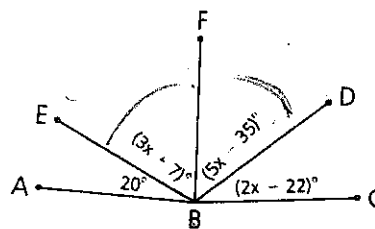
Conclusion:  $\overline{GJ} \cong \overline{KO}$



- 16 On a graph, carefully locate points  $A = (1, 4)$  and  $B = (11, 10)$ .  
 Now locate the point with coordinates  $(\frac{1+11}{2}, \frac{10+4}{2})$ . Does this  
 point appear to be on  $\overline{AB}$ ? Where?

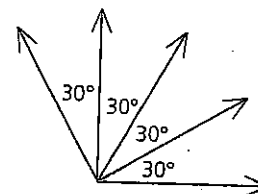
### Problem Set C

- 17  $\overrightarrow{BF}$  bisects  $\angle DBE$ .  
 a Does  $\overrightarrow{BF}$  bisect  $\angle CBA$ ?  
 b What did you discover about  $\angle ABC$   
 and  $\overrightarrow{BF}$ ?



- 18 If two angles are chosen at random from  
 the ten angles in the diagram, what is  
 the probability that

- a The sum of their measures is less  
 than  $90^\circ$ ?  
 b They are complementary?



- 19 Find the measure of the angle formed by the hands of a clock at  
 5:55 A.M.