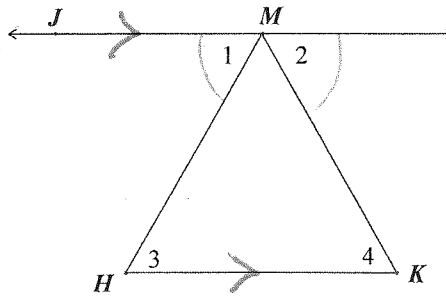


1. Given: $\angle 1 \cong \angle 2$
 $\overline{JM} \parallel \overline{HK}$

Prove: $\triangle HMK$ is isosceles



Statement	Reason
$\angle 1 \cong \angle 2$	Given
$\overline{JM} \parallel \overline{HK}$	Given
$\angle 1 \cong \angle 3, \angle 2 \cong \angle 4$	AIA
$\angle 2 \cong \angle 3$	Transitive Property
$\angle 3 \cong \angle 4$	Transitive Property
$\angle 1$ and $\angle 3, \angle 2$ and $\angle 4$ are alt int. angles	a
$\triangle HMK$ is isosceles	def. of isos. \triangle

2. Solve each equation and state the property of equality or arithmetic as a reason to solve the equation.

a.

$$3(x-11) = 15$$

~~3x~~ given

$$3x - 33 = 15$$

dist. prop.

$$3x = 48$$

Addition Property

$$x = 16$$

division prop

b.

$$\frac{1}{3}(x-1) = 9$$

given

$$(x-1) = 27$$

mult. prop.

$$x = 28$$

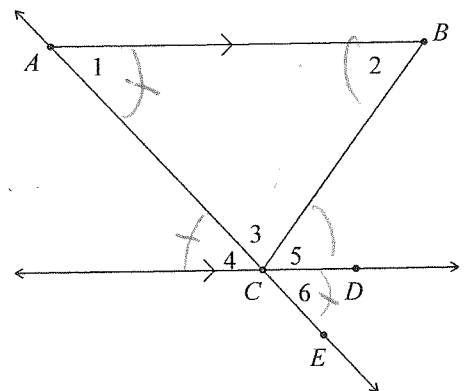
addition prop.

3. Complete the proof below.

Given: $\triangle ABC$ with exterior angle $\angle BCE$ and $\overline{CD} \parallel \overline{AB}$.

Prove: $m\angle 1 + m\angle 2 = \angle BCE$

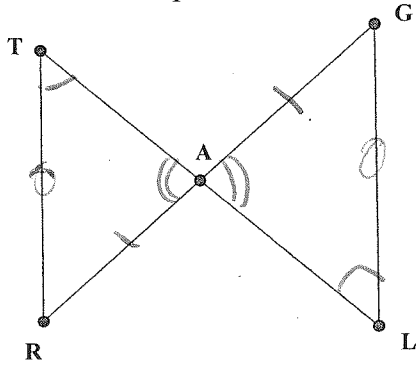
Statement	Reason
1. $\overline{CD} \parallel \overline{AB}$	1. Given
2. $\angle 2$ and $\angle 5$ are alternate interior angles. $\angle 1$ and $\angle 4$ are alternate interior angles.	2. Def. of AIA
3. $\angle 2 \cong \angle 5, \angle 1 \cong \angle 4$	3. AIA Theorem
4. $\angle 4$ and $\angle 6$ are V.A.	4. Definition of Vertical Angles
5. $\angle 4 \cong \angle 6$	5. Vertical Angles Th.
5. $\angle 1 \cong \angle 6$	5. Transitive property
6. $m\angle 5 + m\angle 6 = \angle BCE$	6. Addition Angles
7. $m\angle 1 + m\angle 2 = \angle BCE$	7. Transitive



#4-5. Write a two-column proof for the statements below.

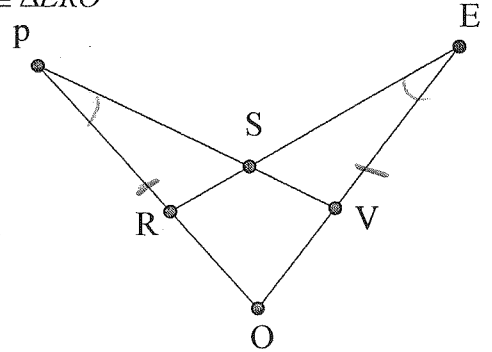
4. Given: $\angle T \cong \angle L$ and A is a midpoint of \overline{RG}

Prove: $\overline{TR} \cong \overline{GL}$



5. Given: $\overline{PO} \cong \overline{EO}$ and $\angle P \cong \angle E$

Prove: $\triangle PVO \cong \triangle ERO$



Statement	Reason
$\angle T \cong \angle L$	Given
A is mp of \overline{RG}	Given
$\overline{RA} \cong \overline{AG}$	def. of midpoint
$\angle T \cong \angle L$	
$\angle TAR \cong \angle LAG$ are v.a. def of v.a	
$\angle TAR \cong \angle LAG$	v.a Theorem
$\triangle TAR \cong \triangle LAG$	AAS Theorem

Statement	Reason
$\overline{PO} \cong \overline{EO}$	Given
$\angle P \cong \angle E$	Given
$\angle O \cong \angle O$	Reflexive
$\triangle PVO \cong \triangle ERO$	ASA post.

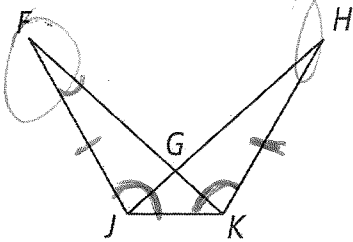
$\overline{TR} \cong \overline{GL}$

CPCTC

Create a flowchart proof.

6. Given: $\angle FJK \cong \angle HKJ, \overline{FJ} \cong \overline{HK}$

Prove: $\angle F \cong \angle H$



$\angle FJK \cong \angle HKJ$	→	$\triangle FJK \cong \triangle HKJ$
Given		
$\overline{FJ} \cong \overline{HK}$	→	$\angle F \cong \angle H$
Given		
$\overline{JK} \cong \overline{JK}$	→	CPCTC
Reflexive Prop		

SAS post

7. Define the following terms:

postulate _____

definition _____

theorem _____