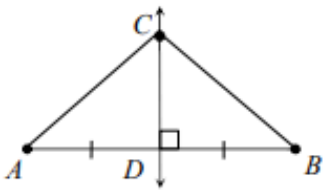
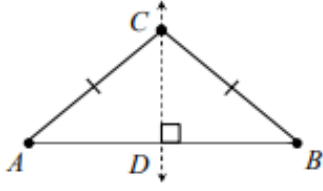
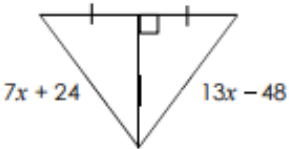
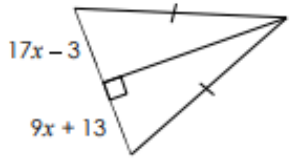
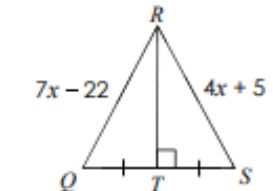
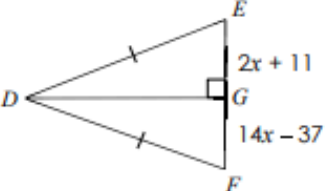
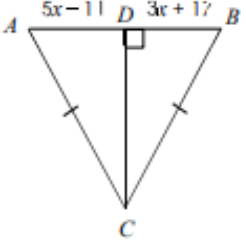
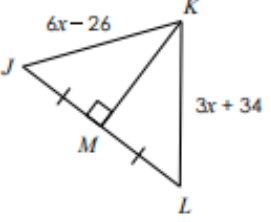


Main Ideas/Questions	Notes/Examples	
<p style="text-align: center;"><b>PERPENDICULAR BISECTOR</b> <i>Theorems</i></p>	<p style="text-align: center;"><b>Perpendicular Bisector Theorem</b></p> <p>If a point lies on the perpendicular bisector of a segment, then it is equidistant from the endpoints of the segment.</p> <p style="text-align: center;"><b>If <math>\overline{CD} \perp \overline{AB}</math> and <math>AD = BD</math>,</b> <b>then _____.</b></p>	
	<p style="text-align: center;"><b>Converse of the Perpendicular Bisector Theorem</b></p> <p>If a point is equidistant from the endpoints of a segment, then it is on the perpendicular bisector of the segment.</p> <p style="text-align: center;"><b>If <math>CA = CB</math>, then a line exists through <math>C</math> such that</b> <b>_____ and _____.</b></p>	
<p>1. Find the value of <math>x</math>.</p>		<p>2. Find the value of <math>x</math>.</p> 
<p>3. Find <math>RS</math>.</p>		<p>4. Find <math>EG</math>.</p> 
<p>5. Find <math>AB</math>.</p>		<p>6. Find <math>JK</math>.</p> 
<p>7. If <math>\overline{JK}</math> is formed by <math>J(-7, -8)</math> and <math>K(1, 4)</math>, determine if <math>L(-9, 2)</math> lies on the perpendicular bisector of <math>\overline{JK}</math>.</p>		

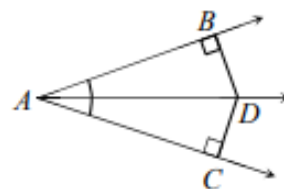
# ANGLE BISECTOR

Theorems

## Angle Bisector Theorem

If a point is on a bisector of an angle, then the point is equidistant from the sides of the angle.

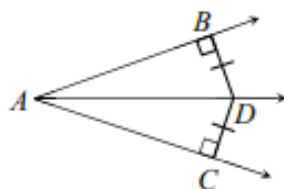
If  $\overline{AD}$  bisects  $\angle BAC$ ,  $\overline{AB} \perp \overline{BD}$ , and  $\overline{AC} \perp \overline{CD}$ ,  
then \_\_\_\_\_.



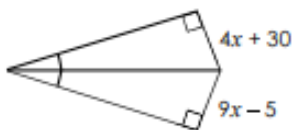
## Converse of the Angle Bisector Theorem

If a point is on the interior of an angle and equidistant from the sides of the angle, then the point is on the angle bisector.

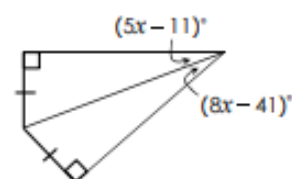
If  $BD = CD$ ,  $\overline{AB} \perp \overline{BD}$ , and  $\overline{AC} \perp \overline{CD}$ ,  
then \_\_\_\_\_.



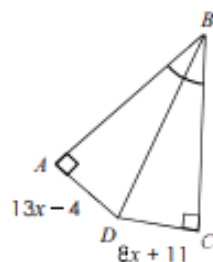
8. Find the value of  $x$ .



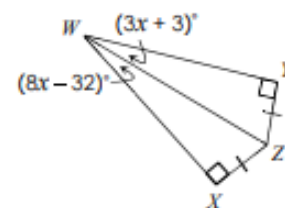
9. Find the value of  $x$ .



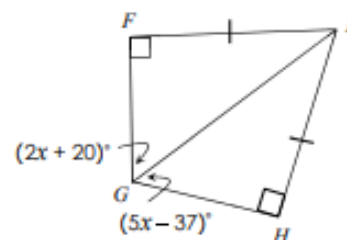
10. Find  $AD$ .



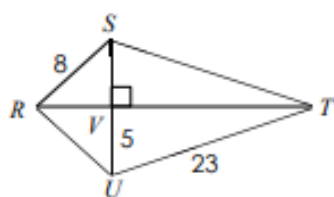
11. Find  $m\angle XWZ$ .



12. Find  $m\angle FGH$ .



1. If  $\overline{RT}$  bisects  $\overline{SU}$ , find each measure.



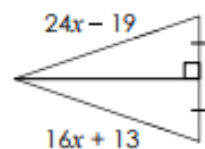
$$ST = \underline{\hspace{2cm}}$$

$$RU = \underline{\hspace{2cm}}$$

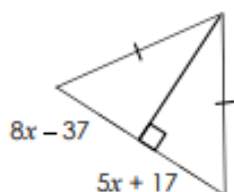
$$SV = \underline{\hspace{2cm}}$$

$$SU = \underline{\hspace{2cm}}$$

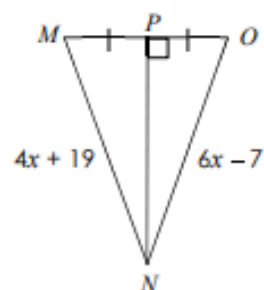
2. Find  $x$ .



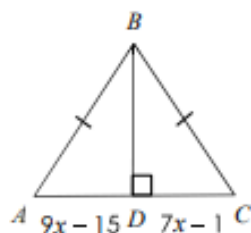
3. Find  $x$ .



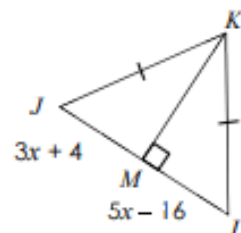
4. Find  $MN$ .



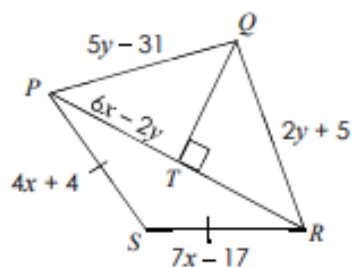
5. Find  $CD$ .



6. Find  $JL$ .



7. If  $\overline{QT}$  is the perpendicular bisector of  $\overline{PR}$ , find each measure.



$$x = \underline{\hspace{2cm}}$$

$$y = \underline{\hspace{2cm}}$$

$$PQ = \underline{\hspace{2cm}}$$

$$QR = \underline{\hspace{2cm}}$$

$$PS = \underline{\hspace{2cm}}$$

$$SR = \underline{\hspace{2cm}}$$

$$PT = \underline{\hspace{2cm}}$$

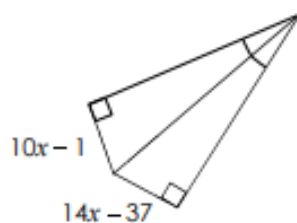
$$PR = \underline{\hspace{2cm}}$$

For questions 8 and 9, determine if  $S$  could lie on the perpendicular bisector of  $\overline{QR}$  with the given coordinates.

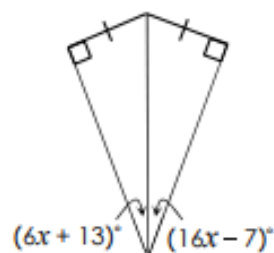
8.  $Q(-5, -1), R(3, 7), S(4, -2)$

9.  $Q(-5, 4), R(8, -3), S(-2, -5)$

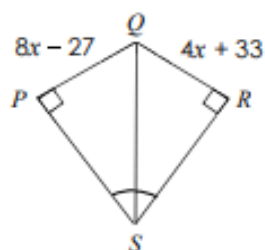
10. Find  $x$ .



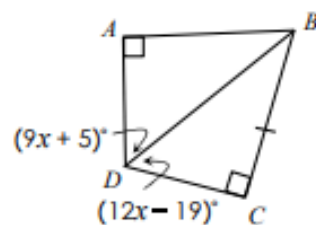
11. Find  $x$ .



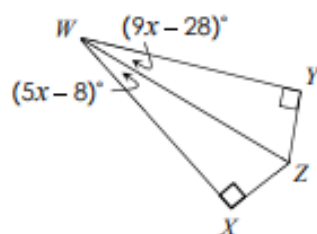
12. Find  $PQ$ .



13. Find  $m\angle BDC$ .



14. Find  $m\angle YWX$ .



15. Find  $ML$ .

