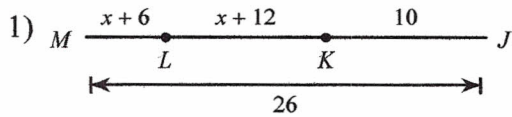


2.7 ~ Midpoints, Bisectors, & Perpendicularity

Past due on: _____ Period _____

Use the Segment Addition Postulate to set up and solve an equation to find x .

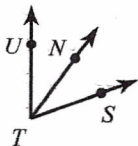


2) Is K the midpoint of \overline{MJ} ? Explain your reasoning.

Use the Angle Addition Postulate to set up and solve an equation to find x .

3) Find x if $m\angle NTS = 10x + 4$, $m\angle UTS = 70^\circ$, and $m\angle UTN = 12x$.

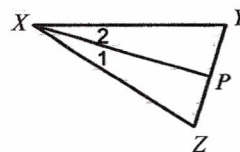
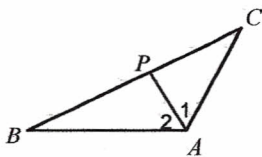
4) Is \overrightarrow{TN} the bisector of $\angle UTS$? Explain your reasoning.



Each figure shows a triangle with one of its angle bisectors. Set up and solve an equation to find the value of x .

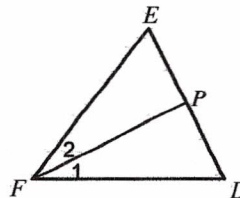
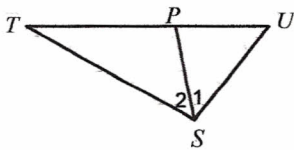
5) Find x if $m\angle 2 = 13x + 6$ and $m\angle 1 = 14x + 2$.

6) Find x if $m\angle 1 = 2x + 4$ and $m\angle 2 = 3x - 2$.



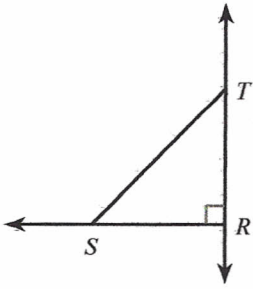
7) Find x if $m\angle 2 = 5x - 1$ and $m\angle UST = 9x + 8$.

8) $m\angle 2 = 2x + 8$ and $m\angle DFE = 6x - 2$. Find x .

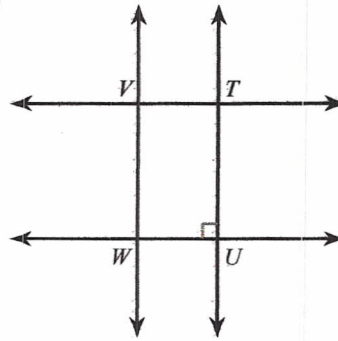


Identify a pair of perpendicular segments and the right angle(s) formed.

9)

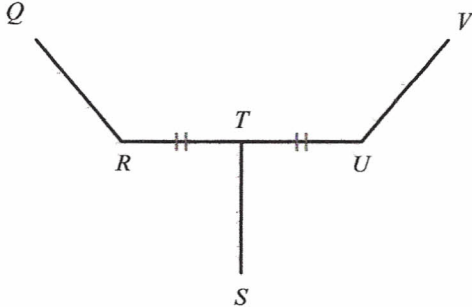


10)

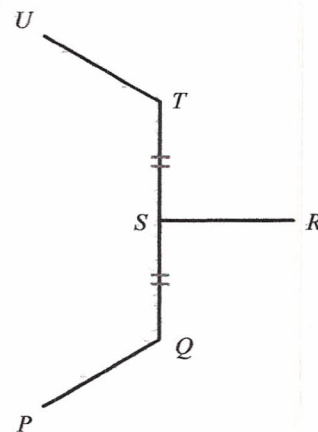


Identify a segment that has been bisected. What is the midpoint? What are the two congruent segments?

11)

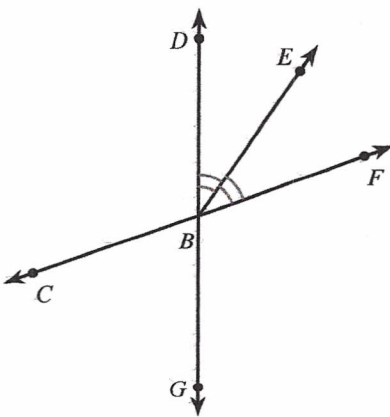


12)

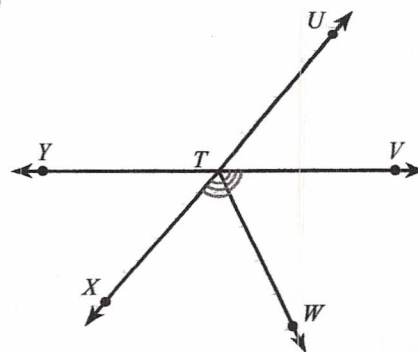


Identify a ray that has bisected an angle. What angle was bisected? What angles are congruent?

13)

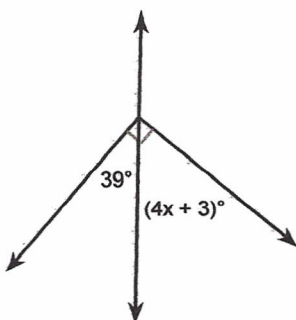


14)

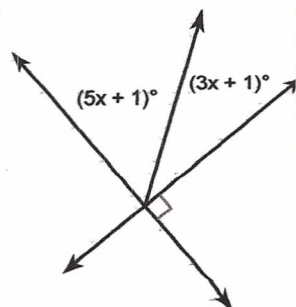


Use the definition of perpendicularity to set up and solve an equation to find the value of x .

15)



16)



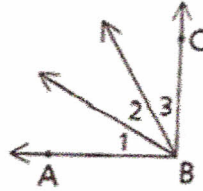
2.7 Midpoints, Bisectors, & Perpendicularity

17. Given: $OM = x + 8$
 $MP = 2x - 6$
 $OP = 44$

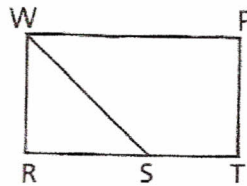


Is M the midpoint of \overline{OP} ?

18. Given: $m\angle 1 = 2x + 10$
 $m\angle 2 = x + 20$
 $m\angle 3 = 3x$
 $\angle ABC$ is a right \angle
 Has $\angle ABC$ been trisected?



19. Given: \overline{WS} bisects $\angle RWP$
 Why is $\angle RWS \cong \angle PWS$?



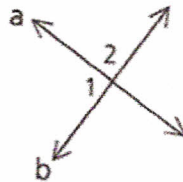
20. Given: $\overline{XY} \cong \overline{YZ}$



Why is Y the midpoint of \overline{XZ} ?

Two-Column Proof Problems:

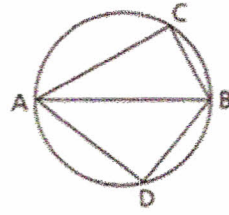
21. Given: $a \perp b$
 Prove: $\angle 1 \cong \angle 2$



Statements

Reasons

22. Given: $m\angle ACB = 90$
 $\overline{AD} \perp \overline{BD}$
Prove: $\angle C \cong \angle D$



Statements

Reasons