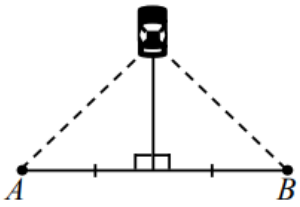
Geometry
Worksheet – Segment and Angle Bisectors

Name: _____
Date: _____ Period: _____

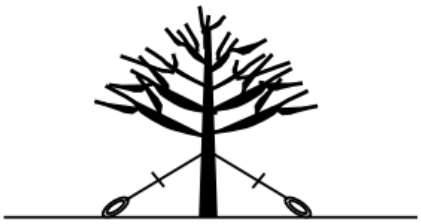
1.) **Theorem**: If a point is on the perpendicular bisector of a segment, then the point is equidistant from the endpoints of the segment.



What conclusion can you make about the car's distance from point *A* and point *B*?

_____

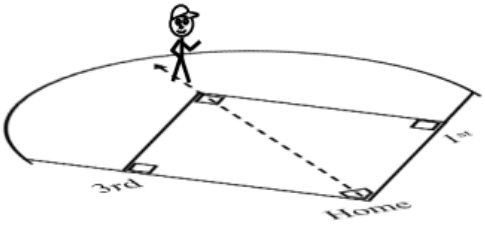
2.) **Theorem**: If a point is equidistant from the endpoints of a segment, then the point is on the perpendicular bisector of the segment.



"Guy wires" are often used to stabilize young trees. If the guy wires in the picture have the same length, what conclusions can you make about the tree's relationship with the ground and the base of tree's distance from the anchor points?

_____

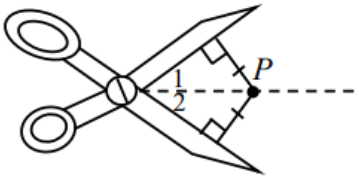
3.) **Theorem**: If a point is on the bisector of an angle, then it is equidistant from the sides of the angle.



If a baseball player is standing on a ray that bisects the angle formed by 3rd base, home plate, and 1st base, what can you conclude about the player's distance from the sides of the angles?

_____

4.) **Theorem**: If a point in the interior of an angle is equidistant from the sides of the angle, then the point lies on the bisector of the angle.

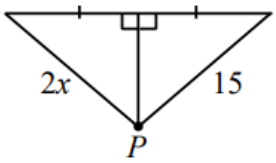


If point *P* is equidistant from the blades of the scissors, what conclusion can you make about $\angle 1$ and $\angle 2$?

_____

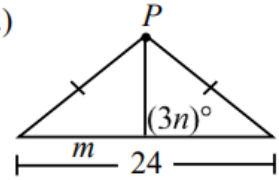
Find the value of the indicated variable.

5.)



$x =$ _____

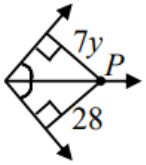
6.)



$m =$ _____

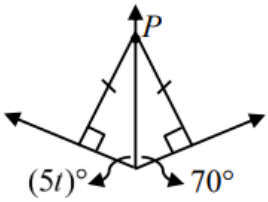
$n =$ _____

7.)



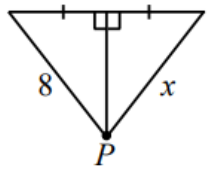
$y =$ _____

8.)

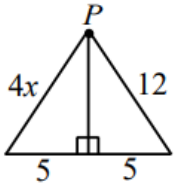


$t =$ _____

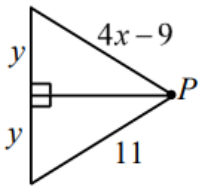
Find the value of x. Then use the answer bank below to determine the color for each region, labelled with the values of x.

9.) 

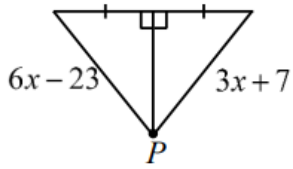
$x =$ _____

10.) 

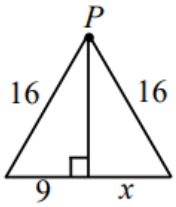
$x =$ _____

11.) 

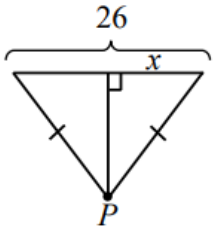
$x =$ _____

12.) 

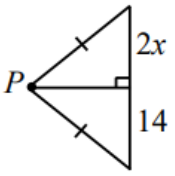
$x =$ _____

13.) 

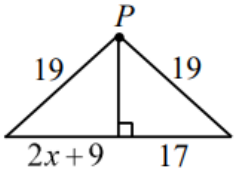
$x =$ _____

14.) 

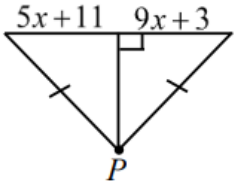
$x =$ _____

15.) 

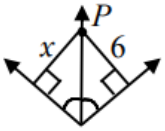
$x =$ _____

16.) 

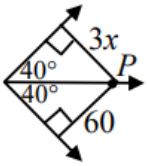
$x =$ _____

17.) 

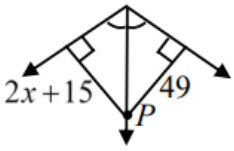
$x =$ _____

18.) 

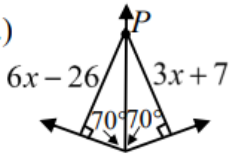
$x =$ _____

19.) 

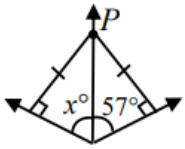
$x =$ _____

20.) 

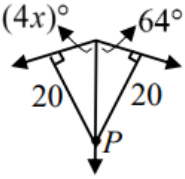
$x =$ _____

21.) 

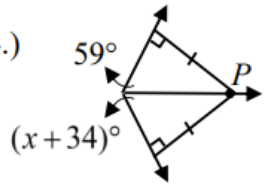
$x =$ _____

22.) 

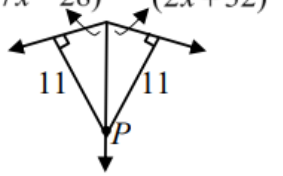
$x =$ _____

23.) 

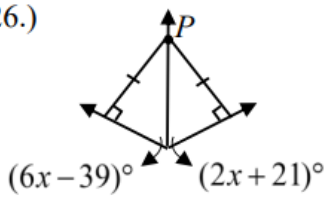
$x =$ _____

24.) 

$x =$ _____

25.) 

$x =$ _____

26.) 

$x =$ _____

$x = 9$ red	$x = 6$ light green	$x = 12$ yellow	$x = 7$ dark blue	$x = 16$ orange	$x = 3$ yellow
$x = 4$ dark green	$x = 11$ red	$x = 8$ dark blue	$x = 25$ dark green	$x = 10$ light green	$x = 2$ light blue
$x = 57$ brown	$x = 5$ light green	$x = 20$ red	$x = 13$ dark green	$x = 15$ dark blue	$x = 17$ yellow