Lesson 5.1 Practice: Perpendicular Bisectors and Angle Bisectors

School Launch · Geometry · Unit 5: Relationships Within Triangles · Worksheet A

Calculator allowed

Name _____ Date _____ Score _____ / 10

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, write the equation, solve, and answer in a sentence with units.

1. Point P lies on the bisector of $\angle ABC$. Its distances to the two sides are $5x - 2$ and $2x + 31$. Find x and the distance. EASY

2. Point P lies on the perpendicular bisector of $\overline{AB}$. Its distances to the two endpoints are $5x - 5$ and $2x + 25$. Find x and the distance. EASY

3. Point P lies on the bisector of $\angle ABC$. Its distances to the two sides are $2x - 1$ and $4x - 15$. Find x and the distance. EASY

4. Point P lies on the bisector of $\angle ABC$. Its distances to the two sides are $3x - 6$ and $2x - 3$. Find x and the distance. MEDIUM

5. Point P lies on the perpendicular bisector of $\overline{AB}$. Its distances to the two endpoints are $2x - 4$ and $4x - 10$. Find x and the distance. MEDIUM

6. Point P lies on the bisector of $\angle ABC$. Its distances to the two sides are $4x + 8$ and $x + 32$. Find x and the distance. MEDIUM

7. Point P lies on the perpendicular bisector of $\overline{AB}$. Its distances to the two endpoints are $2x - 3$ and $4x - 11$. Find x and the distance. MEDIUM

8. Point P lies on the bisector of $\angle ABC$. Its distances to the two sides are $5x + 0$ and $4x + 6$. Find x and the distance. HARD

9. Point P lies on the bisector of $\angle ABC$. Its distances to the two sides are $2x - 4$ and $4x - 12$. Find x and the distance. HARD

10. Point P lies on the perpendicular bisector of $\overline{AB}$. Its distances to the two endpoints are $5x - 2$ and $4x + 7$. Find x and the distance. HARD