Geometry
Homework

Compound Loci
Do Work on Separate Sheet

Answer each of the following. Be sure to include a sketch as part of your answer.

1) What is the number of points in a plane at a given distance from a given line and also equidistant from two points on the given line?

2) How many points are there in a plane that are 4 centimeters from a given line and also 5 centimeters from a given point on that line?

3) How many points are there in a plane that are 5 centimeters from a given line and also 5 centimeters from a given point on that line?

4) Two points, A and B, are 6 inches apart. How many points are there that are equidistant from both A and B and also 5 inches from A?

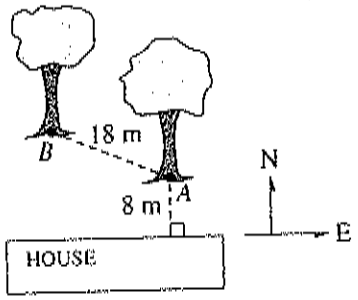
5) How many points are there that are equidistant from two given points, A and B, and also 2 inches from the line passing through A and B?

6) Point P is 1 unit from a line, $\overleftrightarrow{AB}$. How many points in the plane are 2 units from $\overleftrightarrow{AB}$ and also 3 units from P?

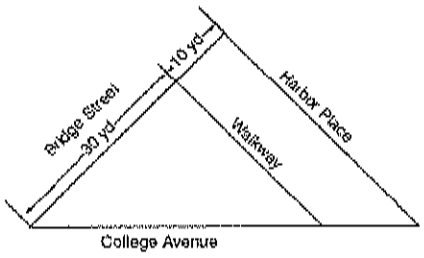
Continue with the work on the back

7) Given <ABC, what is the number of points in the interior of the angle that are equidistant from the sides of the angle, and also equidistant from points A and B?

8) The treasure map to the right shows that tree A is 8 meters north of a house and tree B is 18 meters from tree A. The treasure is 10 meters north of the house and 3 meters from tree A. Indicate on the map and determine the number of points where the treasure may be buried. **Do your work on this sheet!**



9) A triangular park is formed by the intersection of three streets, Bridge Street, Harbor Place, and College Avenue, as shown in the accompanying diagram. A walkway parallel to Harbor Place goes through the park. A time capsule has been buried in the park in a location that is equidistant from Bridge Street and College Avenue and 5 yards from the walkway. Indicate on the diagram with an **X** *each* possible location where the time capsule could be buried.



10) Maria's backyard has two trees that are 40 feet apart, as shown in the accompanying diagram. She wants to place lampposts so that the posts are 30 feet from both of the trees. Draw a sketch to show where the lampposts could be placed in relation to the trees. How many locations for the lampposts are possible?