Homework Investigation 1B **Name:**

1.06

On Your Own

10. Copy this segment onto a sheet of paper.

Use a straightedge and a compass to construct two different isosceles triangles, each with two sides that are the same length as this segment.

11. Use a compass to construct two circles, such that one circle has a radius that is the same length as the diameter of the other circle.

12. Construct a quadrilateral with at least one 60° angle and all sides that are the same length.

13. Draw several different triangles. For each triangle, construct a circle that passes through all three vertices. For what kinds of triangles is the circle's center in the following locations?

a. inside the triangle

b. on the triangle

c. outside the triangle

14. **Standardized Test Prep** Mr. Mendoza's geometry class came up with four conjectures about the medians and the altitudes of triangles. Which of the following conjectures is NOT correct?

A. A median of a triangle divides the triangle into two smaller triangles of equal area.

B. The intersection of the three medians of a triangle is always inside the triangle.

C. In a right triangle, the altitudes intersect at the vertex of the largest angle.

D. In an obtuse triangle, exactly one of the altitudes lies outside the triangle.

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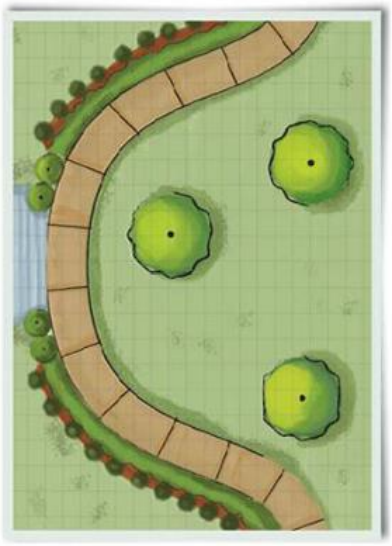
15. Salim planted three new saplings. He wants to install a rotating sprinkler to water the three saplings. Where should he install the sprinkler to make sure that all three saplings get the same amount of water?

a. Trace the saplings onto your paper.

b. Show where Salim should install the sprinkler.

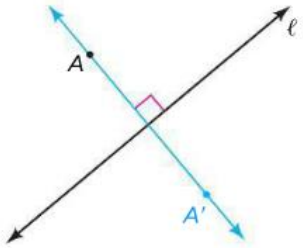
c. Explain your answer.



This is Salim's garden.

16. To reflect a point over a line, do the following:

- Construct a perpendicular line from the given point A to the given line ℓ.
- On the perpendicular, mark point A' on the other side of ℓ from A so that A' and A are the same distance from ℓ.



a. On your own, draw a point and then draw a line that does not pass through that point.

b. Follow the directions above to reflect the point over the line. Think of the line as a mirror. In the figure above, A' is the reflection of A in the mirror. A and A' are the same distance from and in the same position relative to the mirror.