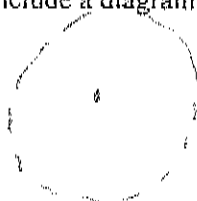# Review for Test on Locus

List the 5 Fundamental Loci. Be sure to include a diagram.

1 | point
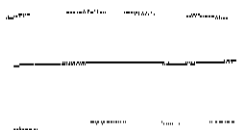
a circle; radius, center

2   2 points

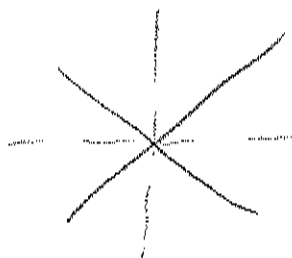perpendicular bisector

3 | line

2 || lines, on each side
X units away

4   2 || lines

| || line, midway between

5   2 intersecting lines

X bisector

The endpoints of the diameter of a circle are (-4, -7) and (8, 9)

1) Find the center of the circle.

$$(2, 1) \qquad r = 10$$

2) Draw the circle on the coordinate axes.

3) What is the equation of the circle?

$$(x-2)^2 + (y-1)^2 = 100$$

4) Name the point that is equidistant from the lines
   x = -1 and x = 7, and also equidistant from the
   center of the circle and the point (2, -9)?

$$(3, -4)$$

5) The park commission wants to put more benches in a city park. The benches must be 2 feet from any sidewalk, and also 2 feet from any trees. If the park is represented in the diagram below, show with an "x" where the benches could be placed. (Hint: there are 4 benches that must be placed within the park boundary)

sidewalk

1 ft
2 ft

4 places

6) A treasure map shows the location of a large rock, a tree, and a small pool. The location of a buried chest is described as being the same distance from the rock as the pool and 3 paces from the tree. Show where you would dig to find the treasure.

2 places

Legend
⊢⊣ = 1 pace