PROBLEM CORNER

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Problem 1

Given a circle C and a point P in space, find the locus formed by taking the reflection of the center of C with respect to the perpendicular bisector plane of P with a variable point of C.
Solution can be found at this URL:
http://sylvester.math.nthu.edu.tw/d2/3problems/Problem%201/. You can click the html file to play the applet after installing Cabri 3D plug-in or you can click the .cg3 to experiment the Cabri 3D file.

Problem 2

Let R be the rhombic dodecahedron with all faces having the same area and the same length 1 for the shorter diagonal. Find the volume of R.
Solution can be found at this URL:
http://sylvester.math.nthu.edu.tw/d2/3problems/Back%20and%20Forth%20Between%20Rhombic%20Dodecahedron%20and%20Cube/. You can click the html file to play the applet after installing Cabri 3D plug-in or you can click the .cg3 to experiment the Cabri 3D file.

Problem 3

Let B be the smallest box containing a regular octahedron having each edge of length 1. Find the volume of B.
Solution can be found at this URL:
http://sylvester.math.nthu.edu.tw/d2/3problems/Smallest%20Cube%20Containing%20a%20Reguar%20Octahedron/. You can click the html file to play the applet after installing Cabri 3D plug-in or you can click the .cg3 to experiment the Cabri 3D file.