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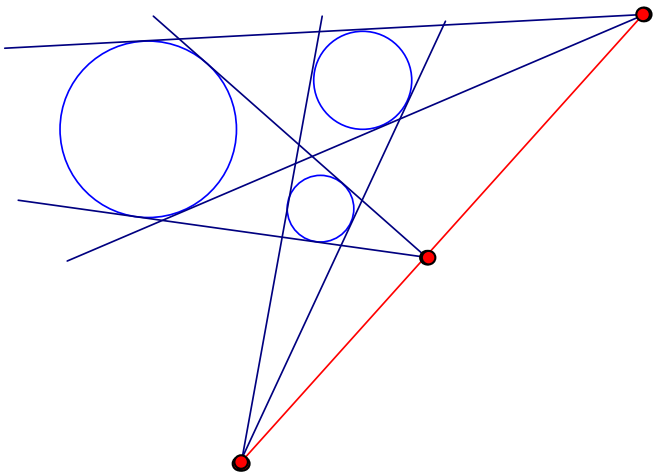
Monge's 3-D Analogue

www.magicmathworks.org/geomlab25

Monge's Theorem states that the 3 red points are in line.



Find the 3 spheres resting in the washers. Move them around. For each arrangement, rest the perspex sheet against them so that an edge meets the board. Monge's 3-D analogue says that this is always possible.

Line
Parabola
Paraboloid
Hyperbola
Hyperboloid
Hyperbolic paraboloid
Line pair
Sine curve
Tractrix
Exponential curve
Catenary
Catenoid
Helix
Helicoid
Plane
Polygon
Polyhedron
Tiling
Archimedean spiral
Equiangular spiral
Loxodrome
Line family
Circle
Cylinder
Cone
Sphere
Ellipse