

SOLIDS

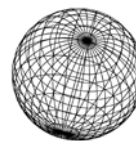
PRAXIS FLASHCARD #344

SPHERE

A **sphere** is a three-dimensional, perfectly round shape. Sphere is from the Greek word for "ball."

$$V = \frac{4}{3}\pi r^3 \quad SA = 4\pi r^2$$

Technically, in mathematics, a sphere only includes the "surface" and not the interior.



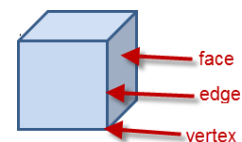
PRAXIS FLASHCARD #341, #342, & #279

POLYHEDRON

A **polyhedron** is any three-dimensional solid with faces, edges, and vertices. Euler's formula describes an interesting property of convex polyhedron: $V - E + F = 2$. Convex **polyhedron** are named according to the number of faces:

4 = tetrahedron
5 = pentahedron
6 = hexahedron
7 = heptahedron

8 = octahedron
9 = nonahedron
10 = decahedron

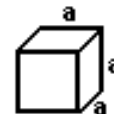


PRAXIS FLASHCARD #38

CUBE

A **cube** is a three-dimensional solid where all angles are right angles and all faces are squares. A cube is also informally called a square box.

$$V = a^3 \quad SA = 6a^2$$

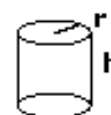


PRAXIS FLASHCARD #39

CYLINDER

A **cylinder** is a three-dimensional solid where the top and bottom are circles

$$V = \pi r^2 h \quad SA = 2\pi r^2 + 2\pi r h$$

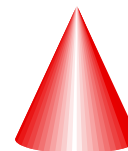


PRAXIS FLASHCARD #259

CONE

A **cone** is a three-dimensional shape with a circular base. A cone can be formed by spinning a triangle in three-dimensional space.

$$V = \frac{1}{3}\pi r^2 h$$

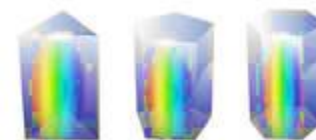


PRAXIS FLASHCARD #317

PRISM

A **prism** is a three-dimensional object with two bases of the same figure; all the side faces are rectangles. Prisms are named according to their bases. As such, if the two bases are triangles, it is a triangular prism. If the two bases are hexagons, it is a hexagonal prism.

$$V = \text{area of base} \times \text{height}$$



PRAXIS FLASHCARD #318

PYRAMID

A **pyramid** (in geometry) is a three-dimensional object. The base of the pyramid is a polygon. Line segments connect the base of the pyramid to a single point, called the **apex**. Each base edge and the apex form a triangle -- thus all faces of a pyramid are triangular.



PRAXIS FLASHCARD #301

NET OR NETWORK

A **net** is a two-dimensional representation of a three-dimensional object. If a net is cut out, it can be put together to form the three-dimensional object it represents.

