Math Sheet

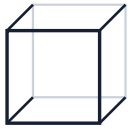
Name _____ Score _____ Teacher _____ Date _____

Solid Figures Formula Reference

Use the stated assumptions for each formula. Area is measured in square units and volume in cubic units.

Cube

A rectangular prism with six congruent square faces.
Assumption: All edges have length s.
Six congruent square faces.



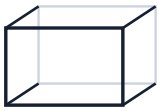
Surface area: SA = 6s^2 (square units)

Volume: V = s^3 (cubic units)

s = edge length

Rectangular Prism (Cuboid)

A right prism with rectangular faces.
Assumption: Edges l, w and h meet at right angles.
Opposite faces are congruent.



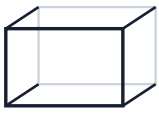
Surface area: SA = 2lw + 2lh + 2wh (square units)

Volume: V = lwh (cubic units)

l = length; w = width; h = perpendicular height

General Right Prism

A solid with two congruent parallel polygonal bases joined by rectangles.
Assumption: The prism is right; h is perpendicular to both bases.
B is one base area and P is its perimeter.



Surface area: SA = 2B + Ph (square units)

Volume: V = Bh (cubic units)

B = area of one base; P = base perimeter; h = perpendicular height

Diagrams are not to scale.

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Solid Figures Formula Reference

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Right Cylinder

A solid with two congruent circular bases.
Assumption: The cylinder is right; h is perpendicular to the bases.
The lateral net is a rectangle of width 2*pi*r.

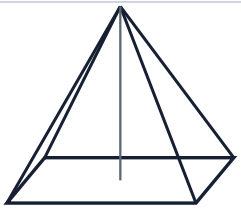
Surface area: SA = 2*pi*r^2 + 2*pi*r*h (square units)

Volume: V = pi*r^2*h (cubic units)

r = base radius; h = perpendicular height

Pyramid

A solid with one polygonal base and triangular faces meeting at an apex.
Assumption: h is perpendicular from the apex to the base.
Assumption: SA = B + Pl/2 only for a regular pyramid with one common face slant height l.
For a general pyramid, add the areas of the individual triangular faces.



General surface area: SA = B + sum of triangular-face areas (square units)

Regular-pyramid surface area: SA = B + Pl/2 (square units)

Volume: V = Bh/3 (cubic units)

B = base area; P = base perimeter; h = perpendicular height; l = face slant height

Right Cone

A solid with a circular base and one apex.
Assumption: The cone is right; the apex lies above the base center.
l is the slant height from the apex to the base circle.

Surface area: SA = pi*r^2 + pi*r*l (square units)

Volume: V = pi*r^2*h/3 (cubic units)

r = base radius; h = perpendicular height; l = slant height

Diagrams are not to scale.

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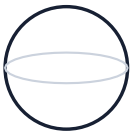
Sphere

All points in space at distance r from one center.
Assumption: r is the radius.
The diameter is 2r.



Surface area: SA = 4*pi*r^2 (square units)

Volume: V = 4*pi*r^3/3 (cubic units)

r = radius