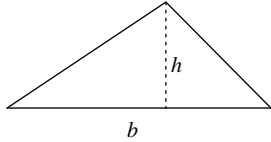
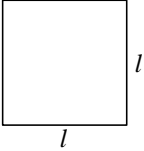
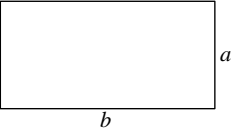
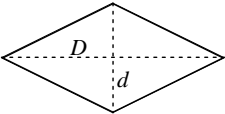
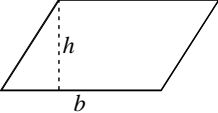
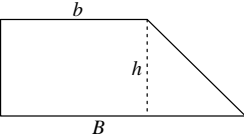
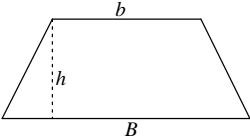
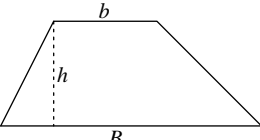
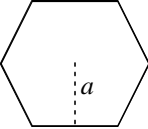
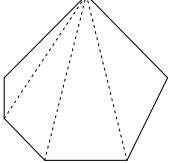
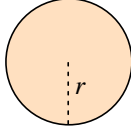
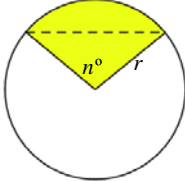
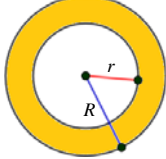
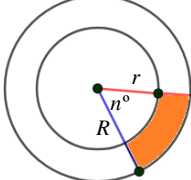
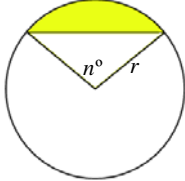
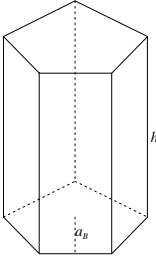
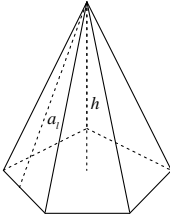
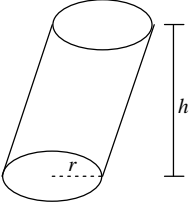


AREAS AND VOLUMES

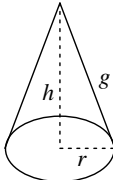
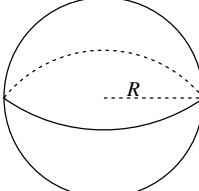
		NAME	FORM	AREA		
AREAS OF PLANE FIGURES QUADRILATERALS (4-sided polygons)		TRIANGLES (3-sided polygons)		$A = \frac{b \cdot h}{2}$		
		QUADRILATERALS (With two in two parallel sides)		Square		$A = l \cdot l$
				Rectangle		$A = b \cdot a$
				Rhombus		$A = \frac{D \cdot d}{2}$
				Rhomboid or parallelogram		$A = b \cdot h$
		TRAPEZOIDS (With two parallel sides)		Right trapezoid		$A = \frac{(B + b) \cdot h}{2}$
				Isoceles trapezoid		
				Scalene trapezoid		
		N – SIDED POLYGON		Regular polygon		$A = \frac{p \cdot a}{2}$ $p = \text{perimeter}$
				Irregular polygon		It decomposes into triangles and their areas are added

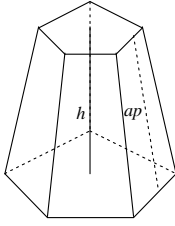
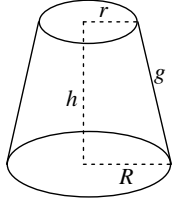
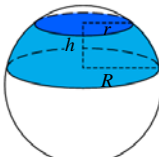
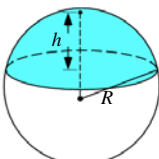
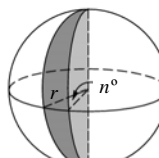
AREAS AND VOLUMES

AREAS	CIRCULAR FIGURES	Circumference		$L = 2 \cdot \pi \cdot r$
		Circle		$A = \pi \cdot r^2$
		Circular sector		$A = \frac{\pi \cdot r^2 \cdot n^\circ}{360^\circ}$ <small>$n^\circ = \text{number of degrees}$</small>
		Circular crown		$A = \pi R^2 - \pi r^2$
		Circular trapezoid		$A = \frac{\pi(R^2 - r^2)n^\circ}{360^\circ}$
		Circular segment		$A = A_{\text{sector}} - A_{\text{isosceles triangle}}$

AREAS AND VOLUMES OF GEOMETRIC SOLID	NAME	FORM	AREAS	VOLUMES
POLYHEDRA <small>(Geometric solids limited by polygons)</small>	PRISM		$A_L = p_B \cdot h$ <small>$p_B = \text{perimeter base}$</small> $A_B = \frac{p_B \cdot a_B}{2}$ <small>$a_B = \text{base apothem}$</small> $A_T = A_L + 2A_B$	$V = A_B \cdot h$
	PYRAMID		$A_{\text{TRIANG.}} = \frac{l_B \cdot a_l}{2}$ <small>$a_l = \text{lateral apothem}$</small> $A_B = \frac{p_B \cdot a_B}{2}$ $A_T = A_L + 2A_B$	$V = \frac{A_B \cdot h}{3}$
	CILINDER		$A_L = 2\pi r \cdot h$ <small>$h = \text{height}$</small> $A_B = \pi \cdot r^2$ $A_T = A_L + 2A_B$	$V = A_B \cdot h$

AREAS AND VOLUMES

	CONE		$A_L = \pi \cdot r \cdot g$ <i>g</i> = generatrix or slant height $A_B = \pi \cdot r^2$ $A_T = A_L + A_B$	$V = \frac{A_B \cdot h}{3}$
	SPHERE		$A_T = 4\pi R^2$	$V = \frac{4}{3}\pi R^3$

		NAME	FORM	AREAS	VOLUMES
FRUSTRUMS (Solids that are obtained from others, when cut by a plane parallel to the base)	FRUSTRUM PYRAMID or TRUNCATED PYRAMID		$A_L = \frac{(P + p)ap}{2}$ <i>P</i> = perimeter of the largest base <i>p</i> = perimeter of the smaller base <i>ap</i> = frustum apothem $A_T = A_L + A_B + A_b$ <i>A_B</i> = larger base area <i>A_b</i> = smaller base area	$V = \frac{(A_B + A_b + \sqrt{A_B A_b}) \cdot h}{3}$	
	FRUSTRUM CONE or TRUNCATED CONE		$A_L = \pi(R + r)g$ $A_T = \pi g(R + r) + \pi R^2 + \pi r^2$	$V = \frac{\pi h(R^2 + r^2 + Rr)}{3}$	
SPHERICAL SOLIDS (Solid obtained from a solid and cut into one or more planes)	SPHERICAL SEGMENT		$A = 2\pi r \cdot h$	$V = \frac{\pi h(h^2 + 3R^2 + 3r^2)}{6}$	
	SPHERICAL CAP		$A = 2\pi R \cdot h$	$V = \frac{\pi h^2(3R - h)}{3}$	
	SPHERICAL WEDGE or UNGULA or SPHERICAL LUNE		$A = 4\pi r^2 \cdot \frac{n^\circ}{360^\circ}$	$V = \frac{4}{3}\pi r^3 \cdot \frac{n^\circ}{360^\circ}$	

If we don't want to memorize the formulas for finding the volume of frustums, we use similar triangles and the Thales' Theorem.

To find the area and volume of a spherical wedge we can use a rule of three.