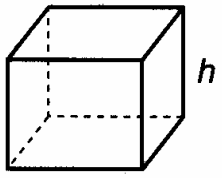
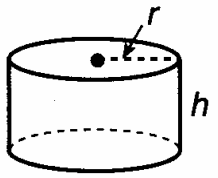
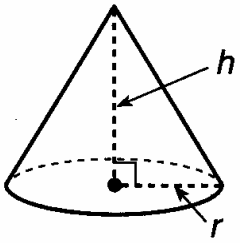
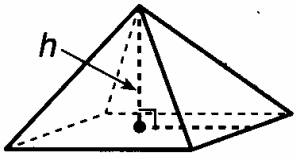
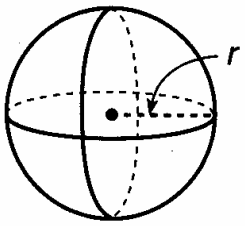
Volumes of three-dimensional objects :

Volume

Volume (V) is the number of cubic units it takes to fill a three-dimensional object. The following chart gives formulas for the volumes of various solids. These formulas can also be found on the AIMS reference sheet. Make sure you are familiar with their location before you take the test.

Figure	Formula	
Prism 	$V = Bh$	where B = area of the base h = height
Cylinder 	$V = \pi r^2 h$	where r = radius of the base h = height $\pi \approx 3.14$
Cone 	$V = \frac{1}{3}\pi r^2 h$	where r = radius of the base h = height $\pi \approx 3.14$
Pyramid 	$V = \frac{1}{3}Bh$	where B = area of the base h = height
Sphere 	$V = \frac{4}{3}\pi r^3$	where r = radius $\pi \approx 3.14$

Circular arcs and sectors of circles :

Circular arc

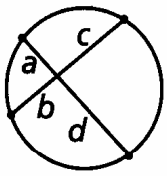
If you know the circumference of a circle, you can use the measures of angles and arcs to find the lengths of minor, major, and intercepted arcs. You can solve such problems by using proportions or a formula.

Sector of circles

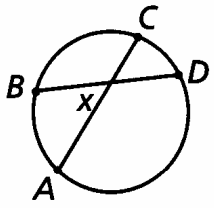
A sector is a region of a circle that is bounded by two radii and an arc. You can find the area of a sector by using proportions or a formula.

The following chart is a duplicate of a section of the AIMS reference sheet. Make sure you become familiar with it before you take the AIMS test.

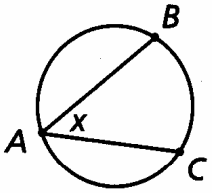
Additional Formulas	
Circumference $= \pi d = 2\pi r$	Use 3.14 or $\frac{22}{7}$ for π.
Area of a sector: $A = \pi r^2\left(\frac{\text{degrees in corresponding arc}}{360°}\right)$	Length of a circular arc: Length of $\overset{\frown}{AB} = 2\pi r\,\frac{m\overset{\frown}{AB}}{360°}$



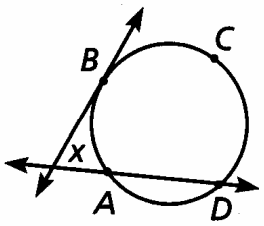
$\frac{a}{b} = \frac{c}{d}$



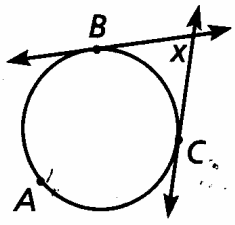
$m\angle x = \frac{1}{2}\left(m\overset{\frown}{AB} + m\overset{\frown}{CD}\right)$



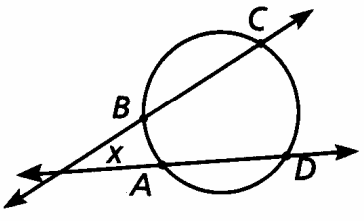
$m\angle x = \frac{1}{2}m\overset{\frown}{BC}$



$m\angle x = \frac{1}{2}\left(m\overset{\frown}{BCD} - m\overset{\frown}{AB}\right)$



$m\angle x = \frac{1}{2}\left(m\overset{\frown}{BAC} - m\overset{\frown}{BC}\right)$



$m\angle x = \frac{1}{2}\left(m\overset{\frown}{CD} - m\overset{\frown}{AB}\right)$