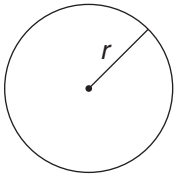
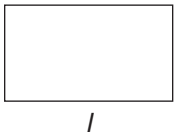
Geometry Reference Sheet

Circle



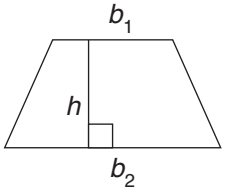
Area = πr^2
Circumference = $2\pi r$

Rectangle



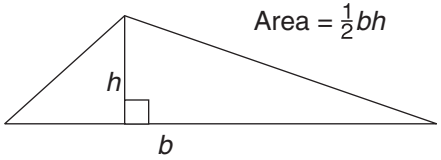
Area = lw
Perimeter = $2l + 2w$

Trapezoid



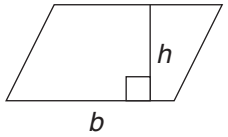
Area = $\frac{1}{2}h(b_1 + b_2)$

Triangle



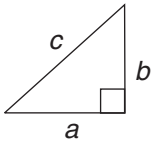
Area = $\frac{1}{2}bh$

Parallelogram



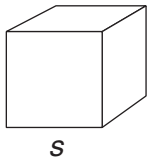
Area = bh

Pythagorean Theorem



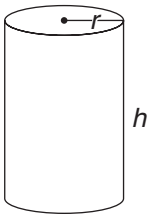
$a^2 + b^2 = c^2$

Cube



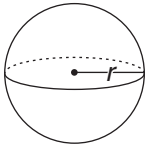
Volume = s^3
Surface Area = $6s^2$

Cylinder



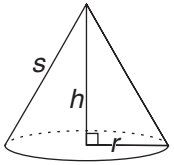
Volume = $\pi r^2 h$
Surface Area = $2\pi r^2 + 2\pi rh$
Lateral Area = $2\pi rh$

Sphere



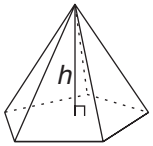
Volume = $\frac{4}{3}\pi r^3$
Surface Area = $4\pi r^2$

Cone



Volume = $\frac{1}{3}\pi r^2 h$
Surface Area = $\pi r^2 + \pi rs$
Lateral Area = πrs

Right Pyramid



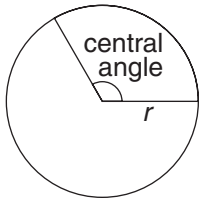
Volume = $\frac{1}{3}$ × base area × h
Surface Area = base area + face areas

DISTANCE BETWEEN TWO POINTS: $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

MID-POINT BETWEEN TWO POINTS: $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

SUM OF INTERIOR ANGLES OF AN n-SIDED POLYGON: $180\,(n - 2)$

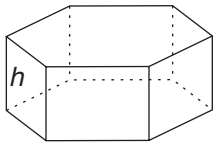
Sector of Circle



Arc Length = $\frac{\text{circumference} \times \text{central angle}}{360^\circ}$

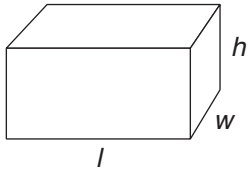
Sector Area = $\frac{\text{total area} \times \text{central angle}}{360^\circ}$

Right Prism



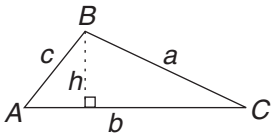
Volume = base area × h
Surface Area = base areas + face areas
Lateral Area = sum of face areas

Rectangular Solid



Volume = lwh
Surface Area = $2wl + 2lh + 2wh$
Lateral Area = $2(l + w)h$

Trigonometry Formulas



Area = $\frac{1}{2}ab \sin C$

Law of sines: $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Law of cosines: $b^2 = a^2 + c^2 - 2ac(\cos B)$