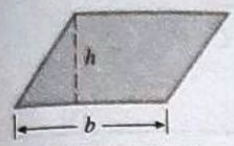
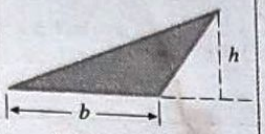
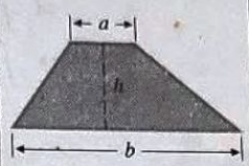
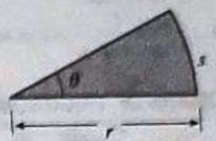
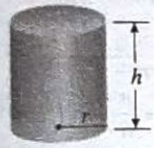
## GEOMETRY FORMULAS

$A$ = area, $S$ = lateral surface area, $V$ = volume, $h$ = height, $B$ = area of base, $r$ = radius, $l$ = slant height, $C$ = circumference, $s$ = arc length

| Parallelogram | Triangle | Trapezoid | Circle | Sector |
|---|---|---|---|---|
|  |  |  |  |  |
| $A = bh$ | $A = \frac{1}{2}bh$ | $A = \frac{1}{2}(a+b)h$ | $A = \pi r^2,\ C = 2\pi r$ | $A = \frac{1}{2}r^2\theta,\ s = r\theta$ ($\theta$ in radians) |

| Right Circular Cylinder | Right Circular Cone | Any Cylinder or Prism with Parallel Bases | Sphere |
|---|---|---|---|
|  |  |  |  |
| $V = \pi r^2 h,\ S = 2\pi rh$ | $V = \frac{1}{3}\pi r^2 h,\ S = \pi rl$ | $V = Bh$ | $V = \frac{4}{3}\pi r^3,\ S = 4\pi r^2$ |

## ALGEBRA FORMULAS

| THE QUADRATIC FORMULA | THE BINOMIAL FORMULA |
|---|---|
| The solutions of the quadratic equation $ax^2 + bx + c = 0$ are $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ | $(x+y)^n = x^n + nx^{n-1}y + \frac{n(n-1)}{1\cdot 2}x^{n-2}y^2 + \frac{n(n-1)(n-2)}{1\cdot 2\cdot 3}x^{n-3}y^3 + \cdots + nxy^{n-1} + y^n$<br>$(x-y)^n = x^n - nx^{n-1}y + \frac{n(n-1)}{1\cdot 2}x^{n-2}y^2 - \frac{n(n-1)(n-2)}{1\cdot 2\cdot 3}x^{n-3}y^3 + \cdots \pm nxy^{n-1} \mp y^n$ |



## TABLE OF FORMULAS

### BASIC FUNCTIONS

1. $\int u^n\,du = \frac{u^{n+1}}{n+1} + C$
2. $\int \frac{du}{u} = \ln|u| + C$
3. $\int e^u\,du = e^u + C$
4. $\int \sin u\,du = -\cos u + C$
5. $\int \cos u\,du = \sin u + C$
6. $\int \tan u\,du = \ln|\sec u| + C$
7. $\int \sin^{-1} u\,du = u\sin^{-1} u + \sqrt{1-u^2} + C$
8. $\int \cos^{-1} u\,du = u\cos^{-1} u - \sqrt{1-u^2} + C$
9. $\int \tan^{-1} u\,du = u\tan^{-1} u - \ln\sqrt{1+u^2} + C$
10. $\int a^u\,du = \frac{a^u}{\ln a} + C$
11. $\int \ln u\,du = u\ln u - u + C$
12. $\int \cot u\,du = \ln|\sin u| + C$
13. $\int \sec u\,du = \ln|\sec u + \tan u| + C$
    $= \ln\left|\tan\left(\frac{1}{4}\pi + \frac{1}{2}u\right)\right| + C$
14. $\int \csc u\,du = \ln|\csc u - \cot u| + C$
    $= \ln\left|\tan\frac{1}{2}u\right| + C$
15. $\int \cot^{-1} u\,du = u\cot^{-1} u + \ln\sqrt{1+u^2} + C$
16. $\int \sec^{-1} u\,du = u\sec^{-1} u - \ln\left|u + \sqrt{u^2-1}\right| + C$
17. $\int \csc^{-1} u\,du = u\csc^{-1} u + \ln\left|u + \sqrt{u^2-1}\right| + C$