

## Formulas

The following information is for your reference in solving some of the problems on the test.

Area of a Trapezoid  $A = \frac{1}{2} h(b_1 + b_2)$

Trig Ratios:  $\sin x = \frac{\text{opposite side}}{\text{hypotenuse}}$

Area of an Equilateral Triangle  $A = \frac{s^2}{4} \sqrt{3}$

$\cos x = \frac{\text{adjacent side}}{\text{hypotenuse}}$

Distance  $= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

$\tan x = \frac{\text{opposite side}}{\text{adjacent side}}$

Midpoint  $M = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

Circle  $(x - h)^2 + (y - k)^2 = r^2$

Cylinder      Lateral Area (right)       $L = 2\pi rh$   
                   Total Area (right)          $T = 2\pi r(h + r)$   
                   Volume                                  $V = \pi r^2 h$

Prism, where  $p$  is the perimeter of the base and  $B$  is the area of the base

Lateral Area (right)       $L = ph$   
 Total Area (right)          $T = L + 2B$   
 Volume                                  $V = Bh$

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

Pyramid, where  $p$  is the perimeter of the base,  $B$  is the area of the base, and  $l$  is the slant height

Cone, where  $l$  is the slant height  
                   Lateral Area (right)       $L = \pi rl$   
                   Total Area (right)          $T = \pi r(l + r)$   
                   Volume                                  $V = \frac{1}{3} \pi r^2 h$

Lateral Area (regular)       $L = \frac{1}{2} lp$   
 Total Area (regular)          $T = L + B$   
 Volume                                  $V = \frac{1}{3} Bh$