

GRE 数学常用公式

1. Permutation: $P_n^m = \frac{n!}{(n-m)!} = n(n-1)(n-2)\dots(n-m+1)$
2. Combination: $C_n^m = \frac{n!}{m!(n-m)!} = \frac{n(n-1)(n-2)\dots(n-m+1)}{1\times 2\times 3\dots m}$
3. $Discount = Cost \times rate of Discount$
4. The number of positive factors of $Z = x^a \cdot y^b \cdot z^c$ (x, y, z is prime number), $n = (a+1)(b+1)(c+1)$
5. Quadratic formula $x = \frac{1}{2a}(-b \pm \sqrt{b^2 - 4ac})$
6. Arithmetic progression $a_n = a_1 + (n-1)d, S_n = \frac{n(a_1 + a_n)}{2} = na_1 + \frac{n(n-1)}{2}d$
7. Geometric progression $a_n = a_1 q^{(n-1)}, S_n = \frac{a_1(1-q^n)}{1-q}$
8. Distance between points (x,y) and (a,b) is $\sqrt{(x-a)^2 + (y-b)^2}$
9. Area of triangle $= \frac{1}{2}bh$
10. Special formula of area of triangle $= \sqrt{a(s-a)(s-b)(s-c)}, s = \frac{1}{2}(a+b+c)$
11. Area of rectangular $= lw$
12. Area of parallelogram $= bh$
13. Area of a rhombus $= \frac{Product\ of\ two\ diagonals}{2}$
14. Area of a trapezoid $= \frac{(b_1 + b_2)}{2}h$
15. Volume of cubic solid $= a^3$
16. Volume of rectangular solid $= l \times w \times h$
17. Volume of right circular cylinder $= \pi r^2 \cdot h$

$$18. \text{ Volume of right circular cone} = \frac{1}{3} \pi r^2 h$$

$$19. \text{ Volume of ball} = \frac{4}{3} \pi r^3$$