GRE Quantitative Formula Sheet

Essential formulas for GRE Quantitative Reasoning

Number Properties

Primes: 2, 3, 5, 7, 11, 13, 17, 19, 23...
Div by 3: Sum of digits divisible by 3
Div by 4: Last two digits div by 4
Even/odd: e±e=e, o±o=e, e×o=e
|a|: Distance from 0 (always >= 0)

Fractions & Decimals

Add: a/b + c/d = (ad + bc) / bd
Multiply: a/b × c/d = ac / bd
Divide: a/b ÷ c/d = a/b × d/c

Percentages

% increase: (new - old) / old × 100
% decrease: (old - new) / old × 100
Profit: sell - cost, %profit = profit/cost × 100

Geometry

Circle: $A = \pi r^2$, $C = 2\pi r$
Triangle: $A = (1/2)bh$, angles = 180
Rectangle: $A = lw$, $P = 2l + 2w$
Pythagorean: $a^2 + b^2 = c^2$
Prism: $V = lwh$
Cylinder: $V = \pi r^2 \times h$
Sphere: $V = (4/3) \cdot \pi r^3$

Algebra Essentials

Linear: y = mx + b, Ax + By = C
Quadratic: $x = (-b \pm (b^2 - 4ac)) / 2a$
Systems: Substitution or elimination
Inequalities: Flip sign when ×/÷ by negative

Exponents & Roots

Product: $a^m \times a^n = a^{(m+n)}$
Power: $(a^m)^n = a^{mn}$
Zero: $a^0 = 1$
Negative: $a^{(-n)} = 1/a^n$
Fractional: $a^{(1/n)}$ = n-th root of a

Statistics

Mean: Sum of values / count
Median: Middle value (sorted)
Mode: Most frequent value
Range: Max - Min
Std dev: Spread from mean
Weighted avg: Sum(val×wt) / Sum(wt)

Probability & Word Problems

P(A): favorable / total
P(A and B): P(A) × P(B) (independent)
P(A or B): P(A) + P(B) - P(A and B)
Complement: P(not A) = 1 - P(A)
Distance: rate × time
Work rate: 1/t = 1/t1 + 1/t2

The GRE tests problem-solving, not just computation. For each formula, practice recognizing which type of problem needs it.