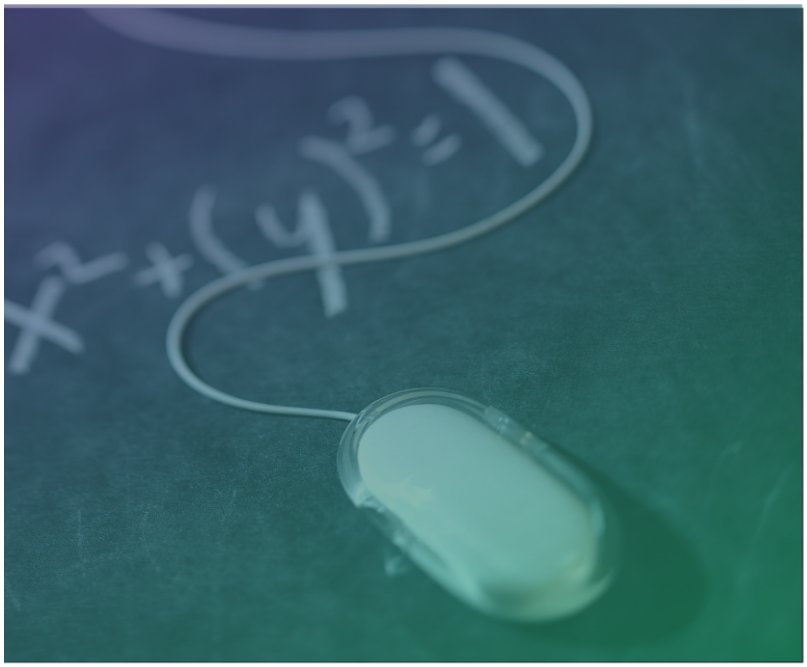
MAGOOSH PRESENTS:

GRE MATH FORMULAS CHEAT SHEET



Jump to:

- Geometry
- Divisibility • Combinations and Permutations • Prime Numbers and Integers • Average
- Probability • Percentages • Interest Rate
- Distance, rate, and time • Slope of a line

Geometry

Squares

Perimeter =

$$4 \times s$$

where s = side

Area =

$$s^2$$

Rectangles

Area =

$$l \times w$$

where l = length and w = width

Perimeter =

$$2l + 2w$$

Trapezoids

Area =

$$\frac{Base1 + Base2}{2} \times height$$

Polygons

Total degrees =

$$180(n - 2)$$

where n = number of sides

Average degrees per side or **degree measure of congruent polygon** =

$$180\frac{(n - 2)}{n}$$

Circles

Area =

$$\pi r^2$$

Circumference =

$$2\pi r$$

Arc length =

$$\frac{x}{360} \times 2\pi r$$

Area of sector =

$$\frac{x}{360} \times \pi r^2$$

Triangles

Area =

$$\frac{1}{2} \times bh$$

Pythagorean Theorem

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

› Click here for a practice question on triangles!

Divisibility

- 3 : sum of digits divisible by 3
- 4 : the last two digits of number are divisible by 4
- 5 : the last digit is either a 5 or zero
- 6 : even number and sum of digits is divisible by 3
- 8 : if the last three digits are divisible by 8
- 9: sum of digits is divisible by 9

Combinations and Permutations

Combinations

$$nCr = \frac{n!}{r!\,(n-r)!}$$

Permutations

$$nPr = \frac{n!}{(n-r)!}$$

n is the total number, *r* = is the number you are choosing

Prime Numbers and Integers

- 1 is not a prime. 2 is the smallest prime and the only even prime.
- An integer is any counting number including negative numbers (e.g. −3, −1, 2, 7...but not 2.5).

Average

Average =

$$\frac{\text{sum of } n \text{ numbers}}{n}$$

Average speed =

$$\frac{\text{total distance}}{\text{total time}}$$

› Click here for a practice question on averages!

Probability

Probability of event =

$$\frac{number\ of\ ways\ that\ fit\ the\ requirement}{number\ of\ total\ ways}$$

Percentages

Percent Increase

$$\frac{\text{new amount} - \text{original amount}}{\text{original amount}} \times 100$$

Percent Decrease

$$\frac{\text{original amount} - \text{new amount}}{\text{original amount}} \times 100$$

Interest rate

Simple Interest

$$V = P\left(1 + \frac{rt}{100}\right)$$

where P is principal, r is rate, t is time

Compound Interest

$$V = P(1 + \frac{r}{100n})^{nt}$$

where n is the number of times compounded per year

› Click here for a practice question on percentages!

Distance, rate, and time

$$D = rt$$

$$Distance = rate \times time$$

The Distance Formula

$$\sqrt{\left(x_2 - x_1\right)^2 + \left(y_2 - y_1\right)^2}$$

Slope of a line

$$y = mx + b$$

› Click here for a practice slope of a line question!