

Superscript and Subscript Demonstration

Mathematical Expressions

The Pythagorean theorem states that $a^2 + b^2 = c^2$, where c is the hypotenuse. Einstein's equation $E = mc^2$ expresses the equivalence of mass and energy.

The area of a circle is $A = \pi r^2$, and the volume of a sphere is $V = (4/3)\pi r^3$. For compound interest: $A = P(1 + r/n)^{nt}$.

The n^{th} partial sum of a geometric series $S_n = a(1 - r^n)/(1 - r)$. Logarithm: $\log_2(8) = 3$.

Chemical Formulae

Water has the formula H_2O . Carbon dioxide is CO_2 . Sulfuric acid is H_2SO_4 , and glucose is $\text{C}_6\text{H}_{12}\text{O}_6$. Ethanol is $\text{C}_2\text{H}_5\text{OH}$ and ammonia is NH_3 .

Combustion of methane: $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$. Photosynthesis: $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$.

Ordinal Numbers

She finished in 1st place. The 2nd runner-up received silver. By the 3rd quarter the team secured the championship. Our 100th customer received a special prize on the company's 21st anniversary.

Footnote References

The study found significant correlations between sleep deprivation and cognitive performance.^[1] Participants sleeping fewer than six hours showed worse memory results.^[2] These findings align with circadian rhythm research^[3] and support the hypothesis that deep sleep consolidates memories.^[4]

1. Smith, J. et al. (2023). Sleep and cognition. *Journal of Neuroscience*, 45(2), 112–128. [↑](#)

2. Jones, A. & Lee, B. (2022). Memory consolidation during sleep. *Sleep Research*, 18, 44–59. [↑](#)
3. Williams, C. (2021). Circadian rhythm disruption. *Nature Reviews*, 7, 203–215. [↑](#)
4. Brown, D. et al. (2024). REM sleep and declarative memory. *Brain*, 147(3), 891–905. [↑](#)