

Calculator Practice Sheet

Compute each of the following and express your answer in scientific notation, rounded to five significant digits. This is a basic skill that you should have acquired in your high school science classes; it is not really a math topic.

A problem with many high school curricula is that students come to rely on their calculators for the most trivial problems, but cannot use them effectively in problems where they are virtually indispensable. A calculator is a tool. So is a chain saw. But you use a chain saw to cut down trees, not to pluck flowers or trim your nails.

1. $\sqrt[3]{\pi^4 + \sqrt{17}}$ *Answer:* 4.6652.
2. $\frac{(7.2034 \times 10^{-9})(1.2976 \times 10^3)}{3.6123 \times 10^{-4}}$ *Answer:* 2.5876×10^{-2} .
3. $(145e^5)^{.2}$ *Answer:* 7.3548.
4. $\sqrt[3]{12^6 + 25^5} - \sqrt[4]{560}$ *Answer:* 2.2876×10^2 .
5. Let $x = 1.2343 \times 10^{20}$. Compute: $\frac{x^2 + 3x}{\sqrt{x}}$. *Answer:* 1.3713×10^{30} .
6. Let $Q = 3.2123 \times 10^6$ and $H = 4.3212 \times 10^{-3}$. Compute $3Q^2H^3 - QH^2/6$. *Answer:* 2.4978×10^6 .
7. Let $\theta = 5.6765 \times 10^3$. Compute $\frac{\pi\theta^2 - 34,654,000}{4.2342 \times 10^8 - \theta^3}$. *Answer:* -3.6483×10^{-4} .
8. Let $\rho = 3.2312$ and $P = 7\pi$. Compute $\sqrt[4]{(\rho^3 - P)/(\rho - 2)^{1.3}}$. *Answer:* 1.7302.
9. Compute r if $\sqrt{r^3 - 3.4320 \times 10^8} = 1.3236 \times 10^4$. *Answer:* 8.0332×10^2 .
10. Compute α if $\frac{\alpha + 3.4001}{\alpha - 2.1203} = 5.8890 \times 10^{-2}$. *Answer:* -3.7455.
11. $\ln \sin^2 \pi/7$. *Answer:* -1.6700.
12. $\frac{e^{17} \sec^4 2\pi/3}{25,123.17}$. *Answer:* 1.5383×10^4 .
13. $\sqrt[5]{\frac{7 \arctan 4.38728632}{8 \sin^3 3\pi/5 + 5 \csc 5\pi/16}}$. *Answer:* 9.3929×10^{-1} .
14. $(\log(54216354) \tan(\pi/2 - .001))^7$. *Answer:* 5.6805×10^{29} .

Let me know if you find any mistakes. If there is a discrepancy in any digit, one of us is wrong.