

AP Physics 2024-2025 Summer Assignment

Welcome to AP Physics! In this class, we will be using algebra, geometry and a little bit of pre-calculus on a daily basis. In order to refresh your memory, I am asking you to do some math review over the summer. I suggest doing a problem or two here and there— doing all of this in one sitting will not be as beneficial for keeping your math skills strong. Answers will be posted on Schoology.

We will have a quiz the **FIRST** week back in school to check your equation manipulation and scientific notation abilities. Be ready! Feel free to contact me via Schoology or email if you have any questions. Enjoy your summer!

Mrs. Lemos

For the following equations, solve for the variable indicated in terms of the other variables in the equation.

1. $T = \frac{2\pi}{\omega}$

Solve for ω

2. $KE = \frac{1}{2}mv^2$

Solve for m

3. $\omega = \omega_0 + at$

Solve for t

4. $PV = nRT$

Solve for R

5. $F_g = \frac{Gm_1m_2}{r^2}$

Solve for m_1

6. $x = x_0 + v_0t + \frac{1}{2}at^2$

Solve for a

7. $\tau = rF \sin \theta$
Solve for θ

8. $B = \frac{\mu_0 I}{2\pi}$
Solve for I

9. $F_E = \frac{kq_1q_2}{r^2}$
Solve for r

10. $x = A \cos(2\pi ft)$
Solve for A

Express the following the numbers in scientific notation. Make sure you round correctly.

(1) 45,440,000

- (a) 4.5×10^{-7} (b) 4.54×10^6 (c) 4.54×10^7 (d) 4.54×10^8

(2) 25,682.2

- (a) 2.56×10^4 (b) 2.57×10^4 (c) 2.56×10^{-4} (d) 2.57×10^{-4}

(3) 0.000000006

- (a) 6×10^8 (b) 6×10^9 (c) 6×10^{-8} (d) 6×10^{-9}

(4) .00045

- (a) 4.54×10^{-4} (b) 4.5×10^{-5} (c) 4.54×10^4 (d) 4.5×10^5

(5) 205

- (a) 2.05×10^2 (b) 2.05×10^{-2} (c) 2.05×10^3 (d) 2.05×10^{-3}

(6) 0.589

- (a) 5.89×10^1 (b) 5.89×10^0 (c) 5.89×10^{-1} (d) 5.89×10^{-3}

(7) 15.3

- (a) 1.53×10^1 (b) 1.53×10^{-1} (c) 1.53×10^{-2} (d) 1.53×10^2

(8) 6

(a) 6×10^1

(b) 6×10^{-1}

(c) 6×10^2

(d) 6×10^0

(9) $(2 \times 10^5)^{-2}$

(a) 25×10^{-10}

(b) 25×10^{-12}

(c) 4×10^3

(d) 4×10^{-10}

10. $(2 \times 10^3) / (6 \times 10^6)$

(a) -4×10^{-3}

(b) -4×10^9

(c) 3×10^3

(d) 0.33×10^{-3}

11. $(1.2 \times 10^5) / (6 \times 10^{-3})$

(a) 0.2×10^8

(b) -4.8×10^2

(c) 7.2×10^2

(d) 7.2×10^8

12. $(10 \times 10^{-5}) / (5 \times 10^4)$

(a) 2×10^{-9}

(b) 2×10^{-1}

(c) 5×10^{-9}

(d) 5×10^{-2}

13. $(8 \times 10^{-2}) / (2 \times 10^{-4})$

(a) 6×10^{-6}

(b) 6×10^2

(c) 4×10^{-6}

(d) 4×10^2

THE END!