

AP Physics C
Review Chapter 1,2,3

Name:

Given the following vectors:

$$\mathbf{A} = 12 \angle 36^\circ$$

$$\mathbf{B} = 35 \angle (-112^\circ)$$

$$\mathbf{C} = -9\mathbf{i} + 9\mathbf{j}$$

$$\mathbf{D} = 5\mathbf{i} - 6\mathbf{k}$$

$$\mathbf{E} = -8\mathbf{i} + 3\mathbf{j} - 4\mathbf{k}$$

Find the following:

1. $5\mathbf{A}$
2. $-3\mathbf{B}$
3. $-(\frac{1}{3})\mathbf{C}$
4. $\mathbf{A} + \mathbf{B}$
5. $\mathbf{C} - \mathbf{D}$
6. $\mathbf{C} - \mathbf{A} - \mathbf{B}$
7. Convert \mathbf{A} to unit notation
8. Convert \mathbf{C} to polar notation
9. $\mathbf{C} \cdot \mathbf{D}$
10. $\mathbf{B} \cdot \mathbf{A}$
11. $\mathbf{A} \times \mathbf{B}$
12. $\mathbf{D} \times \mathbf{E}$

13. In which notation is it easier to add vectors, *unit vector notation* or *polar notation*? Justify your answer.
14. What does the dot product really do for you?
15. You are told that the dot product of two vectors is zero. What do you know about the two vectors?
16. What does the cross product really do for you?
17. Find the derivative of: $y=6t^3$
18. Find the derivative of: $y=2x-5x^2$
19. Find the derivative of: $y=(3x+3x^2)^{1/3}$
20. Solve the following indefinite integral: $\int (4x)dx$
21. Solve the following indefinite integral: $\int (2x^3 + 3x^{1/2})dx$
22. Evaluate the definite integral: $\int_0^1 2x dx$
23. Evaluate the definite integral: $\int_1^{10} (4 + 2x)dx$