

If two vectors are given such that  $\vec{A} + \vec{B} = 0$ , what can you say about the magnitude and direction of vectors A and B?

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- A. same magnitude, but can be in any direction
- B. same magnitude, but must be in the same direction
- C. different magnitudes, but must be in the same direction
- D. same magnitude, but must be in opposite directions
- E. different magnitudes, but must be in opposite directions

Given that  $\vec{A} + \vec{B} = \vec{C}$ , and that  $A^2 + B^2 = C^2$ ,  
how are vectors A and B oriented with  
respect to each other?

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- A. they are perpendicular to each other
  - B. they are parallel and in the same direction
  - C. they are parallel but in the opposite direction
  - D. they are at  $45^\circ$  to each other
  - E. they can be at any angle to each other
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You are adding vectors of length 20 and 40 units. What is the only possible resultant magnitude that you can obtain out of the following choices?

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- A. 0
- B. 18
- C. 37
- D. 64
- E. 100