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?

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?

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° to each other

E. they can be at any angle to each other

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

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° to each other

E. they can be at any angle to each other

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?

A. 0

B. 18

C. 37

D. 64

E. 100