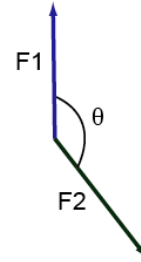


These two forces can add up to zero under the following conditions:

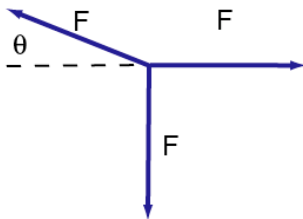
- 1) Never, it's impossible.
- 2) Only for the right values of the magnitudes of F_1 and F_2 .
- 3) Only for the right value of the angle θ .
- 4) Only for the right values of the magnitudes and the angle.
- 5) Need more information to answer.



These two forces can add up to zero under the following conditions:

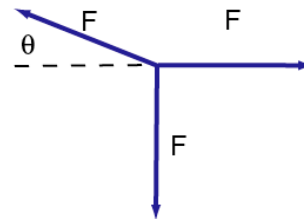
The two vectors can add to zero only if the magnitudes of F_1 and F_2 are identical and the angle is 180° so that the two vectors are exactly back-to-back.

Correct answer is (4).



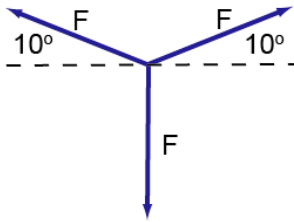
These three forces with exactly identical magnitudes can't add up to zero because:

- 1) I think that the total Y component cannot be zero.
- 2) I think that the total X component cannot be zero.
- 3) I think that both the total Y and the total X components cannot be zero.
- 4) I have no idea how to do this without knowing the value of θ .
- 5) Need more information to answer.



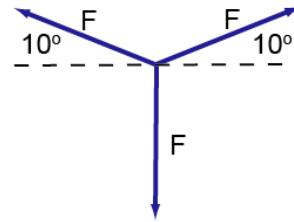
These three forces with exactly identical magnitudes can't add up to zero because:

Both the sine and cosine of all angles are always less than or equal to 1. Thus, if the angle is not zero or 90° , both the X and Y components can never cancel to give zero. So, the answer is (3).



These three forces with exactly identical magnitudes can't add up to zero because:

- 1) I think that the total Y component cannot be zero.
- 2) I think that the total X component cannot be zero.
- 3) I think that both the total Y and the total X components cannot be zero.
- 4) I have no idea how to do this without a calculator.
- 5) Need more information to answer.



These three forces with exactly identical magnitudes can't add up to zero because:

The sine of 10° is much less than 0.5 (it will help you to remember some special cases like $\sin(30^\circ)=0.5$) so the Y component cannot be zero. The X component must be zero by symmetry. So, the answer is (1).