Consider the case where the speed of a car is less than the optimal speed. There are three forces acting on the car: the uphill friction \( \vec{f} = \mu \vec{N} \), the normal force by the road \( \vec{N} \), and the weight \( m \vec{g} \). The equation of motion is given by the vector equation \( \vec{N} + m \vec{g} + \vec{f} = \vec{F}_{cp} \).

Which one of the vertical equations below is correct?

A) \( N_y + |f_y| = mg \).

B) \( N_y - |f_y| = mg \).

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*Explanation:* Adding the component to the diagram above, one finds for the y-component equation is \( N_y + |f_y| = mg \).

*Answer:* A.