


(EXAMPLE) [C-1-1]

Can airplane fly upside-down? To answer this question, make the following simple calculation. Consider a positively cambered airfoil with a zero-lift angle of attack of -3 degrees. The lift slope of this airfoil is 0.11 per degree.

- (a) Calculate the lift coefficient at an angle of attack of 10 degrees.
(b) Now imagine the same airfoil turned upside-down, but at the same 10 degrees angle of attack as part (a). Calculate its lift coefficient.
(c) At what angle of attack must the upside-down airfoil be set to generate the same lift as that when it is right-side-up at a 10 degrees angle of attack?
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Lined area for notes, consisting of multiple horizontal dashed lines.