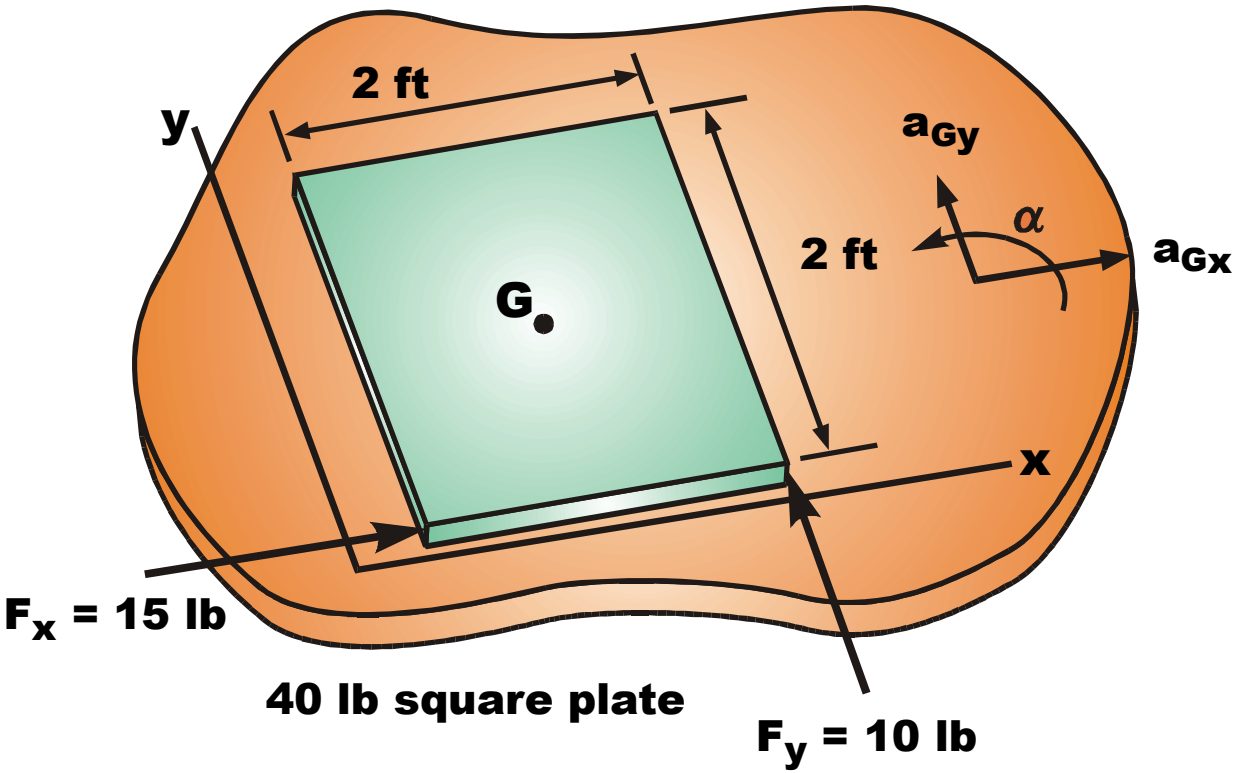
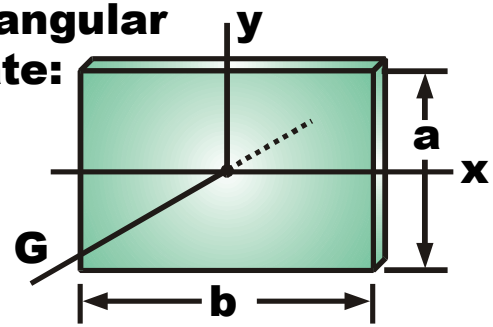
Rigid Body F=ma Intro (Gen Plane): Example 1

(This is a general intro problem to the RB motion equations)

A 40 lb, 2 ft square plate rests on a frictionless surface. Two forces (F_x = 15 lb and F_y = 10 lb) are applied to it as shown. Please determine the plate's: (a) a_{Gx}; (b) a_{Gy}; (c) α .



Rectangular Plate:



$$I_G = \frac{1}{12} m(a^2 + b^2)$$