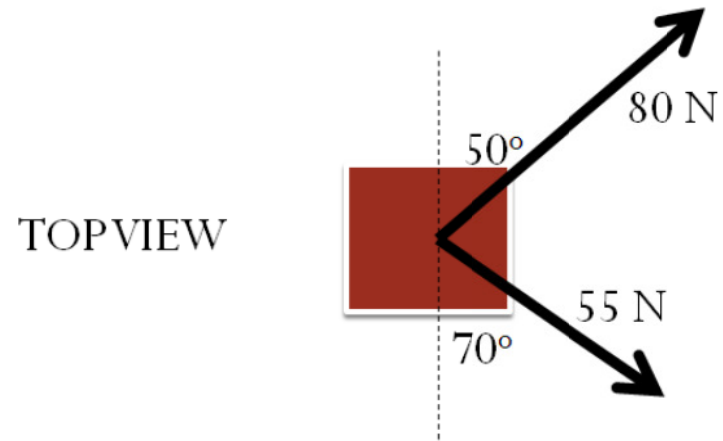


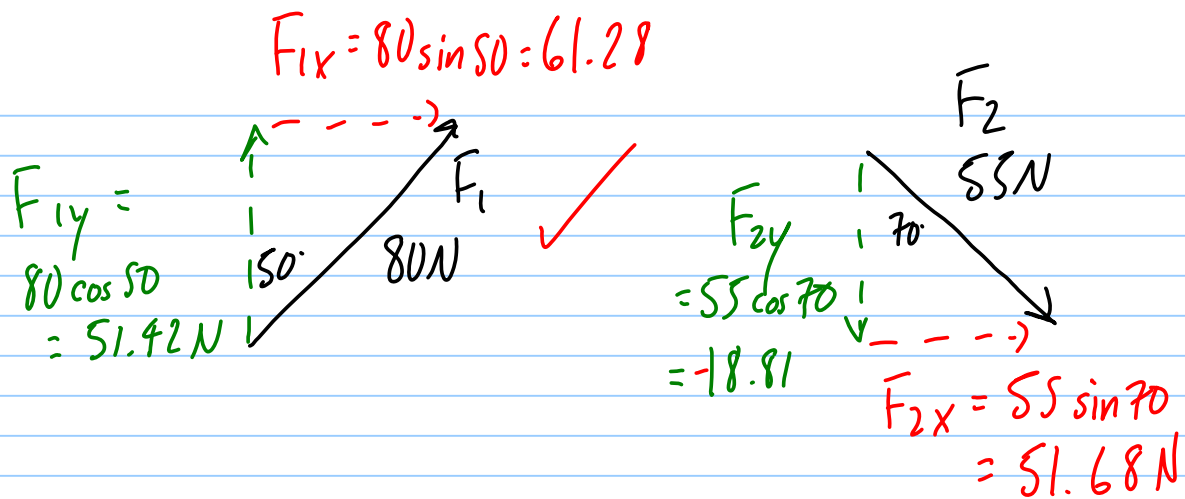
Quiz 2a

Note Title

13/10/2011

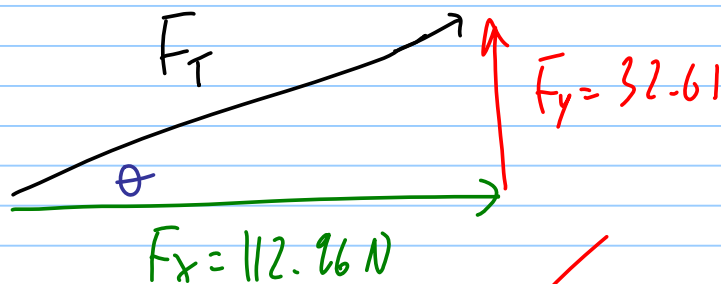
A 14.0 kg block sits at rest on a horizontal, frictionless air table. What is the magnitude and direction of the block's acceleration?





$$\sum F_x = 61.28 + 51.68 = 112.96 \text{ N}$$

$$\sum F_y = 51.42 + (-18.81) = 32.61 \text{ N}$$



$$F_T = \sqrt{F_x^2 + F_y^2} = 117.6 \text{ N}$$

$$\theta = \tan^{-1}\left(\frac{32.61}{112.96}\right) = 16^\circ \text{ (N. of E)}$$

$$F_{net} = ma$$

$$a = \frac{F_{net}}{m} = \frac{117.6 \text{ N}}{14 \text{ kg}} = 8.4 \text{ m/s}^2 \quad 16^\circ \text{ (N. of E)}$$