



PART A
 $F_1 = 3.0 \text{ N} \angle 150^\circ = -2.59\hat{i} + 1.498\hat{j}$

$F_2 = 6.0 \text{ N} \angle 60^\circ = 3.0\hat{i} + 5.18\hat{j}$

$F_3 = 5.0 \text{ N} \angle -30^\circ = 0 - 5.0\hat{j}$

$\sqrt{0.402^2 + 1.678^2}$

$F_{\text{NET}} = 1.725 \angle 76.54^\circ$

Relative to floor force vector = $1.725 \angle 106.54^\circ$
 $(76.54^\circ + 30^\circ)$
 $-0.49\hat{i} + 1.653\hat{j}$

component of force is parallel to floor
 the way vectors are referenced

component of force parallel to floor
 is 1.653 Newton's

PART B
 6.0 N is perpendicular to floor (by inspection)

PART C
 $F_{\text{NET}} = 1.725 \text{ Newton's}$

PART D
 DIRECTION OF F_{NET} is 76.54° FROM FLOOR
 OR 16.54° FROM F_2 ($76.54^\circ - 60^\circ$)