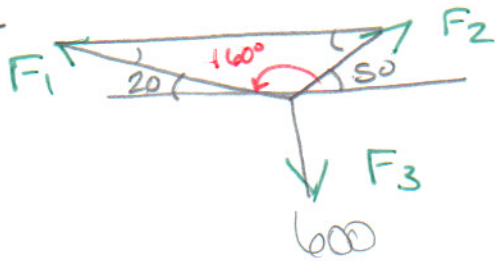


#19

#19 no unit
circled values



$$F_1 = \|F_1\|(\cos 160i + \sin 160j)$$

$$= \|F_1\|\cos 160i + \|F_1\|\sin 160j$$

$$F_2 = \|F_2\|(\cos 50i + \sin 50j) \quad F_3 = 600j$$

$$= \|F_2\|\cos 50i + \|F_2\|\sin 50j$$

Horizontal

$$\|F_1\|\cos 160 + \|F_2\|\cos 50 = 0$$

Vertical

$$\|F_1\|\sin 160 + \|F_2\|\sin 50 - 600 = 0$$

$$\|F_1\|\sin 160 + \|F_2\|\sin 50 = 600$$

← ADD

$$-\sin 50(\|F_1\|\cos 160 + \|F_2\|\cos 50 = 0) \Rightarrow -\|F_1\|\cos 160 \sin 50 - \|F_2\|\cos 50 \sin 50 = 0$$

$$\cos 50(\|F_1\|\sin 160 + \|F_2\|\sin 50 = 600) \Rightarrow \|F_1\|\sin 160 \cos 50 + \|F_2\|\sin 50 \cos 50 = 600 \cos 50$$

$$-2(2x + 3y = 5)$$

$$3(7y + 2y = 3)$$

$$\|F_1\|(\sin 160 \cos 50 - \cos 160 \sin 50) = 600 \cos 50$$

$$\|F_1\| = \frac{600 \cos 50}{(\sin 160 \cos 50 - \cos 160 \sin 50)}$$

$$\|F_1\| \sim 410.4 \text{ lb}$$

$$\|F_1\|\cos 160 = -\|F_2\|\cos 50$$

$$(-1)(410.4)(\cos 160) = -\|F_2\|\cos 50$$

$$\frac{599.96}{\cos 50} = \|F_2\|$$

$$\underline{\underline{600 \text{ lb}}} = \|F_2\|$$