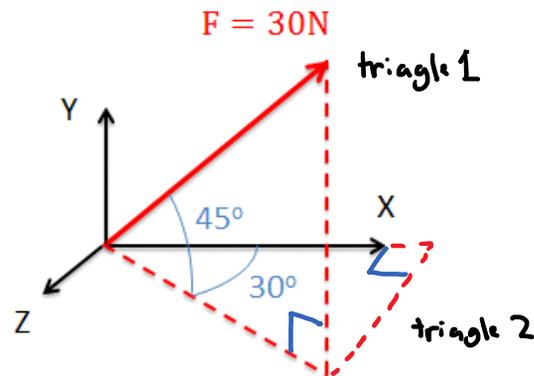
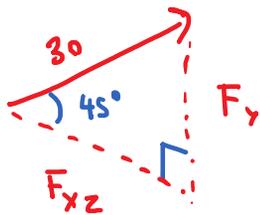


### Problem 3

The force shown below is given in magnitude and direction form. Redraw the diagram with the force vector given in component form.



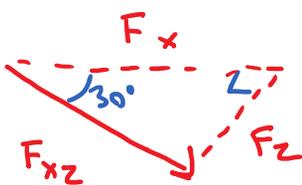
triangle 1



$$F_y = 30 \sin(45) = 21.2 \text{ N}$$

$$F_{xz} = 30 \cos(45) = 21.2 \text{ N}$$

triangle 2



$$F_x = F_{xz} \cos(30) = (30 \cos(45)) \cos(30)$$

$$F_x = 18.4 \text{ N}$$

$$F_z = F_{xz} \sin(30) = (30 \cos(45)) \sin(30)$$

$$F_z = 10.6 \text{ N}$$

$$\vec{F} = [18.4, 21.2, 10.6] \text{ N}$$