Along x axis balancing forces :-

-F4 – F3cos(26.56)+F1cos(45)=-Rcos(180-alpha)=Rcos(alpha)

-80-120\*0.89+150\*0.707=Rcos(alpha)=-80.75 ……..(1)

Along y axis balancing forces :-

F3sin(26.56)+F1sin45-F2=Rcos(alpha-90)=Rsin(alpha)

120\*0.447+150\*0.707-100=Rsin(alpha)=59.69 ……..(2)

Dividing (2) by (1)

Tan(alpha)=-59.69/80.75 =-0.739

=>alpha= 144.7 degree …….(3)

Putting (3) in (2)

R=100.4 N