

Force Analysis Using Matlab

Write Matlab program to determine the resulting force (Resultant) acting on the following node along with its direction:

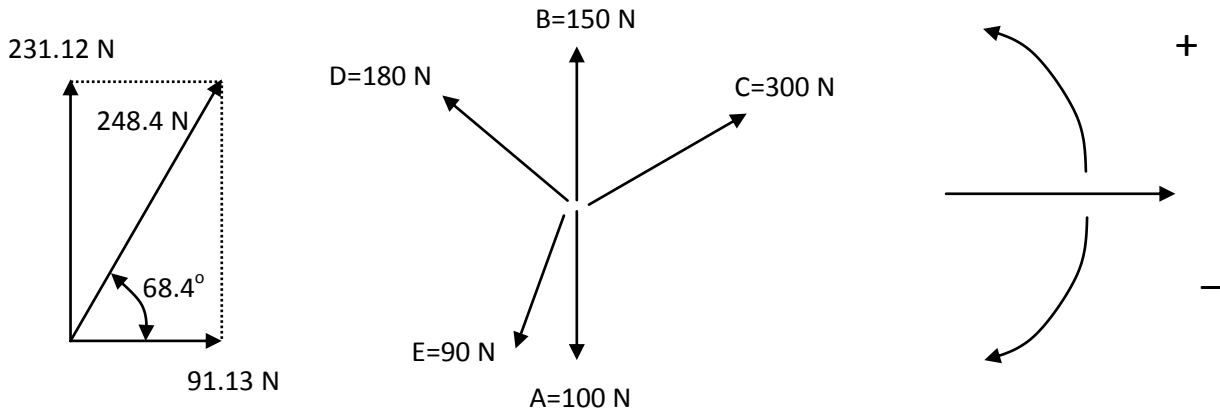
A=100 N , -90 degree

B=150 N , 90 degree

C=300 N , 30 degree

D=180 N , 140 degree

E=90 N , -110 degree



```
clear,clc
Force=[100,150,300,180,90];
Angles=[-90,90,30,140,-110];
Force_x=Force.*cosd(Angles);
Force_y=Force.*sind(Angles);
Result_x=sum(Force_x);
Result_y=sum(Force_y);
Resultant=sqrt(Result_x^2+Result_y^2);
Result_Angle=atand(Result_y/Result_x);
disp(['X_Resultant = ',num2str(Result_x),' N'])
disp(['Y_Resultant = ',num2str(Result_y),' N'])
disp(['Resultant = ',num2str(Resultant),' N'])
disp(['Resultant Angle = ',num2str(Result_Angle),' Degree'])
```

Run:

X_Resultant = 91.1378 N

Y_Resultant = 231.1294 N

Resultant = 248.449 N

Resultant Angle = 68.4799 Degree