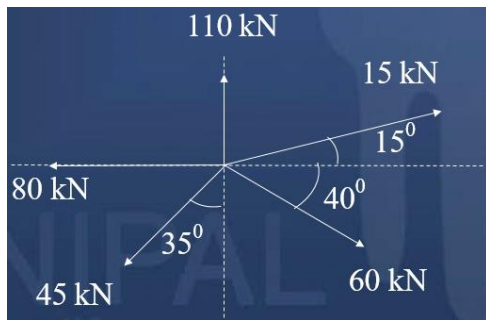
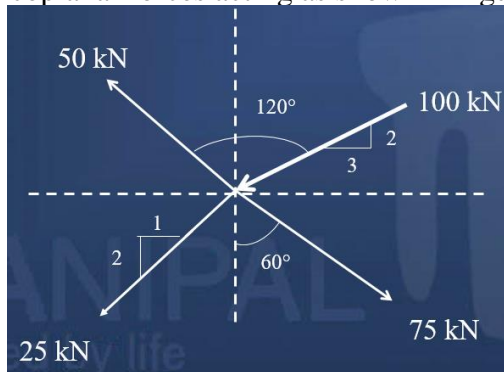


1. Obtain the resultant of the concurrent coplanar forces acting as shown in figure.



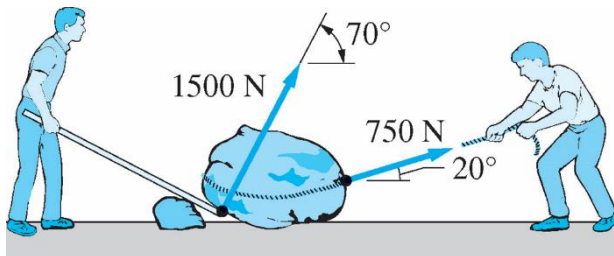
Ans: $R = 59.46 \text{ kN}$; $\theta = 40.29^\circ$

2. Obtain the resultant of the concurrent coplanar forces acting as shown in figure



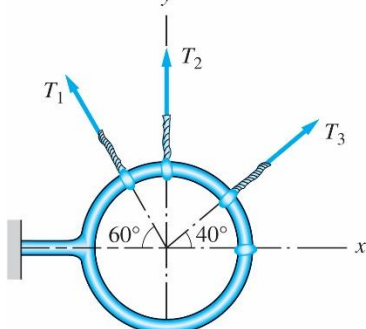
Ans: $R = 119.14 \text{ kN}$; $\theta = 51.44^\circ$

3. Determine the magnitude and direction of the force that is equivalent to the two applied forces.



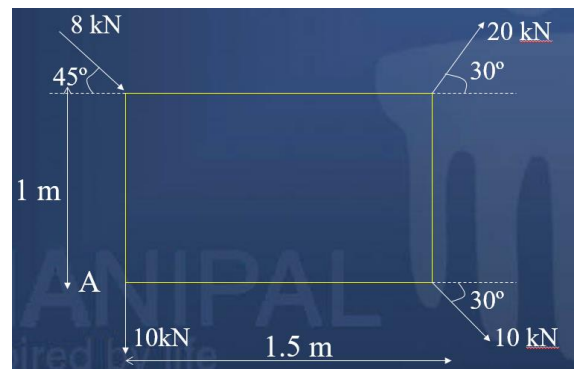
Ans: $R = 2063.67 \text{ N}$; $\theta = 53.83^\circ$

4. The magnitude of the three forces applied to the eye bolt are $T_1=550 \text{ N}$, $T_2=200 \text{ N}$ and $T_3=750 \text{ N}$. Replace these forces with a single equivalent force R_y



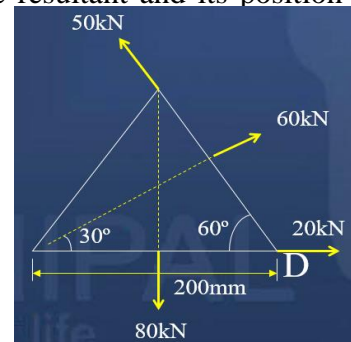
Ans: $R = 1196.5 \text{ N}$; $\theta = 75.5^\circ$

5. Find the resultant of non-concurrent force system and locate it w.r.to 'A'.



Ans: $R = 33.38 \text{ kN}$; $\theta = 18.62^\circ$; $M = 15.477 \text{ kN.m}$ (Clockwise); $d = 0.464 \text{ m}$

6. An equilateral triangle of sides 200mm is acted upon by 4 forces as shown in the figure. Determine magnitude and direction of the resultant and its position from point 'D'.



Ans: $R = 47.43 \text{ kN}$; $\theta = 8.11^\circ$; $M = 2000 \text{ kN.mm}$ (Anticlockwise); $d = 42.16 \text{ mm}$