Date NO.

1. $\cos^2\alpha + \cos^2\beta + \cos^2\gamma = 1$

$\cos^2 120 + \cos^2\beta + \cos^2 60 = 1$

$\beta = 135°$

$\vec{F} = 500\times\cos 120°\vec{i} + 500\times\cos 135°\vec{j} + 500\times\cos 60°\vec{k}$

$= -250\vec{i} - 353.5\vec{j} + 250\vec{k}$ #

2. BE (4, 3, -2) $\quad \vec{u}_{BE} = \frac{4}{\sqrt{29}}\vec{i} + \frac{3}{\sqrt{29}}\vec{j} + \frac{2}{\sqrt{29}}\vec{k}$

$F_x = \frac{4}{5.39}\times 600 = 445.27N$

$F_y = \frac{3}{5.39}\times 600 = 334N$

$F_z = \frac{2}{5.39}\times 600 = 222.63N$

DE (0, 3, 0)

$\vec{u}_{DE} = \frac{0}{3}\vec{i} + \frac{3}{3}\vec{j} + \frac{0}{3}\vec{k}$

$F_{DE//} = 334\times\frac{3}{3} = 334N$ $\quad F_{DE\perp} = \sqrt{600^2 - 334^2} = 498N$