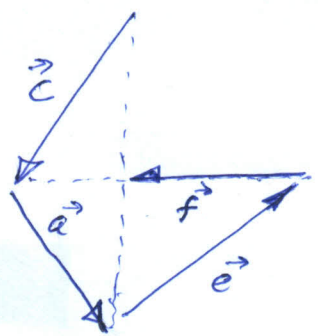


$$A = |A| u_A \quad (5)$$

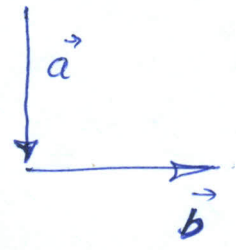
$$= (2\sqrt{2}) \left(\frac{4\hat{i} + 4\hat{j}}{\sqrt{16+16}} \right) =$$

$$\vec{A} = \frac{2\sqrt{2}}{4\sqrt{2}} (4\hat{i} + 4\hat{j}) = \boxed{2\hat{i} + 2\hat{j}}$$

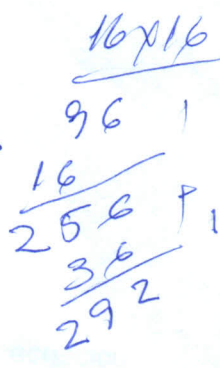


$$\vec{B} = |\vec{B}| \left(\frac{-4\hat{i} + 4\hat{j}}{4\sqrt{2}} \right) = \frac{8}{\sqrt{2}} \left(\frac{-4\hat{i} + 4\hat{j}}{4\sqrt{2}} \right) \vec{a} + \vec{e} + \vec{c} + \vec{f} = \vec{a}$$

$$\vec{B} = \frac{8}{(\sqrt{2})^2} (-\hat{i} + \hat{j}) = \boxed{-4\hat{i} + 4\hat{j}}$$



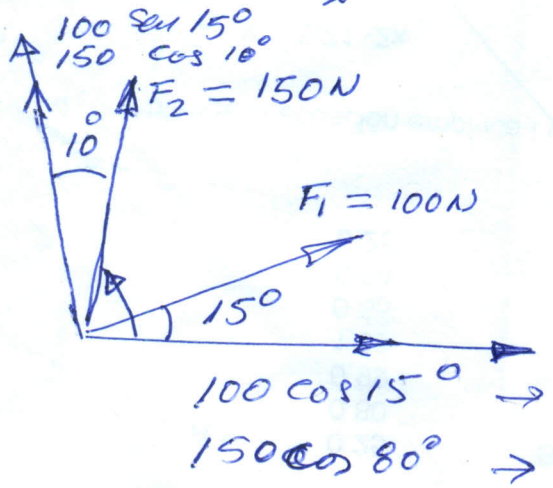
a = 6
b = 16



$$3) \vec{B} = \frac{\sqrt{17}}{2} \left(\frac{4\hat{i} + 6\hat{j} - 4\hat{k}}{\sqrt{16+36+16}} \right)$$

$$\vec{B} = \frac{\sqrt{17}}{2} \left(\frac{4\hat{i} + 6\hat{j} - 4\hat{k}}{2\sqrt{17}} \right)$$

$$\vec{B} = \hat{i} + \frac{3}{2}\hat{j} - \hat{k}$$



$$|\vec{R}| = \sqrt{a^2 + b^2 + 2ab \cos 90^\circ}$$

$$|\vec{R}| = \sqrt{36 + 256}$$

$$|\vec{R}| = \sqrt{292}$$

$$\hat{u}_e = \left(\frac{16\hat{i} + 6\hat{j}}{\sqrt{292}} \right)$$

$$\vec{R} = (100 \cos 15^\circ + 150 \cos 80^\circ) \hat{i}$$

$$+ (100 \sin 15^\circ + 150 \cos 10^\circ) \hat{j}$$

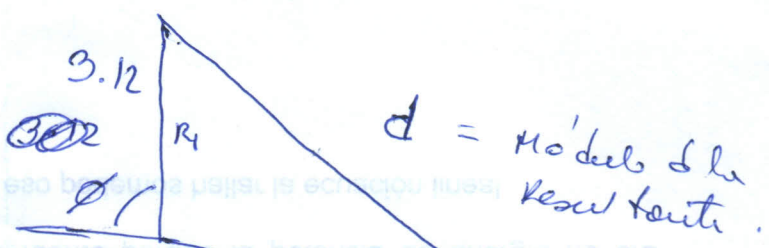
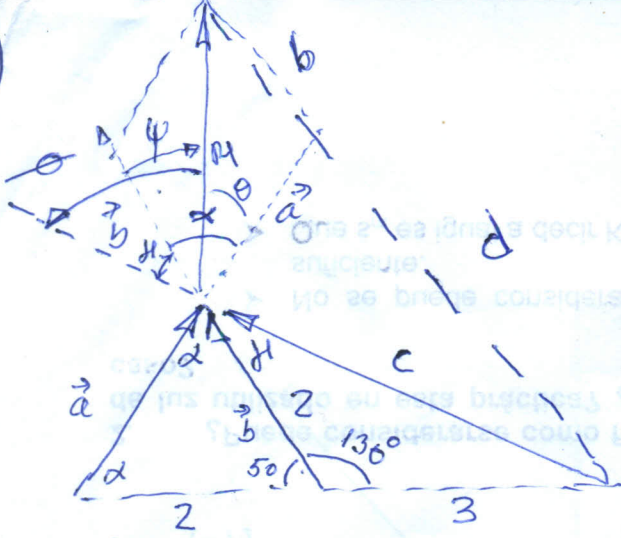
$$= (96.5 + 26) \hat{i} + (25.8 + 147) \hat{j}$$

$$= 122.5 \hat{i} + 173.5 \hat{j}$$

$$\text{Tg } \phi = \frac{173.5}{122.5}$$

$$\phi = 54.7^\circ$$

02)



$d = \text{Módulo de la Resultante}$

$\vec{d} = \vec{c} + \vec{R}_1$

Calculo de c
 $\frac{c}{\text{Sen } 130} = \frac{R_1}{\text{Sen } \alpha}$

Calculo de c por ley de cosenos

$c^2 = 2^2 + 3^2 + 2(2)(3) \cos 50^\circ$
 $c = \sqrt{4 + 9 + 7.71} = 4.55$

Calculo de α
 $\text{Sen } \alpha = \frac{\text{Sen } 130^\circ (3)}{4.55}$

$\alpha = \arcsin(0.505)$
 $\alpha = 30.3^\circ$

$2\alpha + 50 = 180$
 $\alpha = \frac{130}{2} = 65^\circ$

$|\vec{R}_1| = \sqrt{a^2 + b^2 + 2ab \cos \alpha}$

$b = 2, \alpha = 65^\circ$
 Calculo de a por ley de senos.

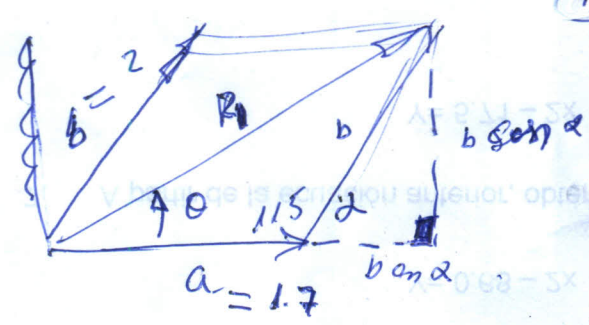
$\frac{a}{\text{Sen } 50^\circ} = \frac{2}{\text{Sen } 65^\circ}$
 $a = \frac{2 \text{ Sen } 50^\circ}{\text{Sen } 65^\circ} = \frac{1.53}{0.90} = 1.7$

$|\vec{R}_1| = \sqrt{(1.7)^2 + (2)^2 + \frac{(2)(1.7)(2) \cos 65^\circ}{2.87}}$

$|\vec{R}_1| = \sqrt{2.89 + 4 + 2.87} = 3.12$

$\phi = \alpha + \psi$
 $180 - 65 = 115$

$\psi = \arctan(\dots)$



$\frac{b}{\text{Sen } \theta} = \frac{R_1}{\text{Sen } 115} \Rightarrow$

$\left(\frac{b \text{ Sen } 115}{R_1} \right) = \text{Sen } \theta$

$\theta = 30.3 + (65 - 35)$
 $\left[\frac{(2)}{3.12} \right] = 35^\circ = \theta$

$\phi = 60.3$

$d^2 = (3.12)^2 + (4.55)^2 + 2(3.12)(4.55) \cos 60^\circ$
 $d = 6$