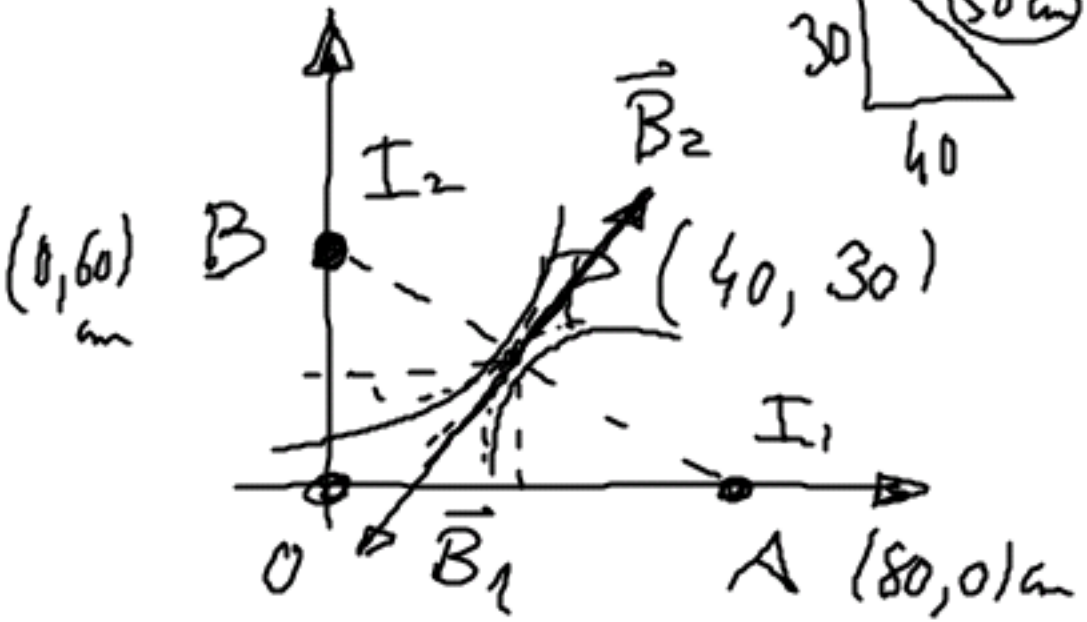


a) $\vec{B}_p = \vec{B}_1 + \vec{B}_2$

$|B_p| = |B_1 - B_2|$

$I_1 = 6A$

$B = \frac{\mu_0 I}{2\pi d}$

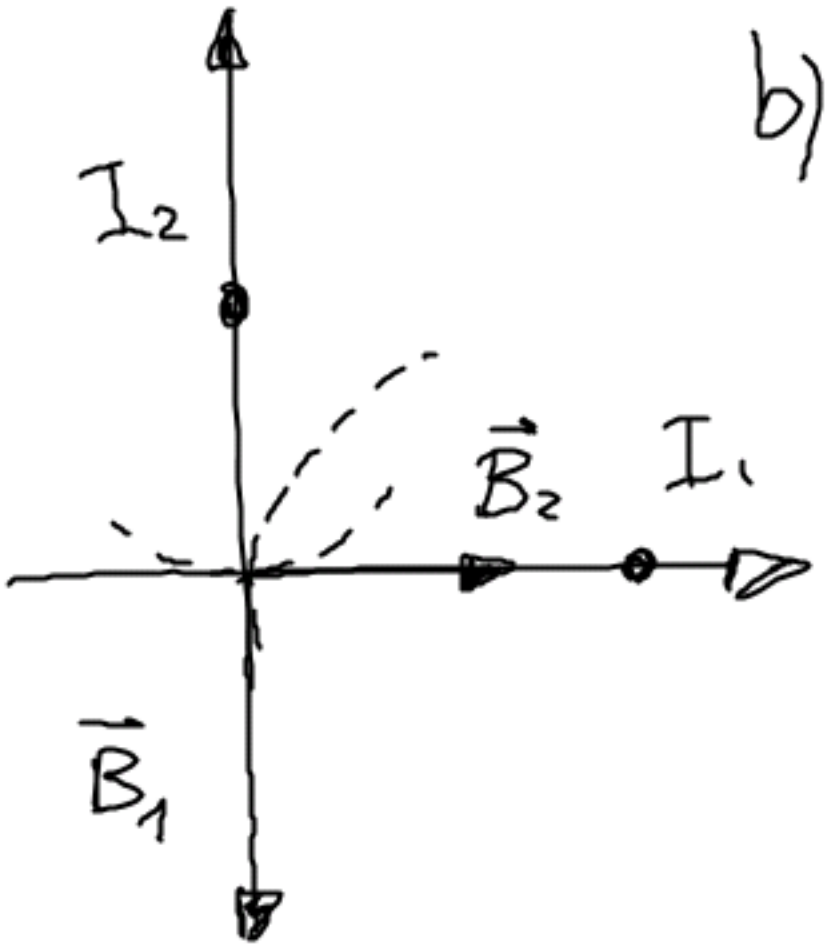
$12 \cdot 10^{-7} = \frac{\mu_0}{2\pi \cdot 50 \cdot 10^{-2}} |I_1 - I_2|$

$I_2 > I_1$

$3 = |6 - I_2|$

$B_p = 12 \cdot 10^{-7}\ T$

$\boxed{I_2 = 9A}$



b)

$$\vec{B}_0 = \vec{B}_1 + \vec{B}_2$$

$$B_1 = 1{,}5 \cdot 10^{-6}\,T$$

$$B_2 = 3 \cdot 10^{-6}\,T$$

$$\boxed{\vec{B}_0 = (3{,}1 - 1{,}5) \cdot 10^{-6}\,T}$$

$$B_0 = 3{,}35 \cdot 10^{-6}\,T$$

$$\alpha = 333^\circ$$