$$dF = I_2 \, d\vec{l} \times \vec{B}$$

a)

$$B_{34} = \frac{\mu_0 I_1}{2\pi \left(c + \frac{a}{2}\right)} \qquad B_{12} = \frac{\mu_0 I_1}{2\pi \left(c - \frac{a}{2}\right)}$$

$$\vec{F}_{12} = I_2 \, b \, \frac{\mu_0 I_1}{2\pi \left(c - \frac{a}{2}\right)} \, \hat{e}_x$$

Siły od 23 i 41 się wzejmą

$$\vec{F}_{34} = I_2 \, b \, \frac{\mu_0 I_1}{2\pi \left(c + \frac{a}{2}\right)} \, (-\hat{e}_x)$$

$$\vec{F} = \frac{I_1 I_2 b}{2\pi} \left(\frac{1}{c - \frac{a}{2}} - \frac{1}{c + \frac{a}{2}} \right) \hat{e}_x$$

b)
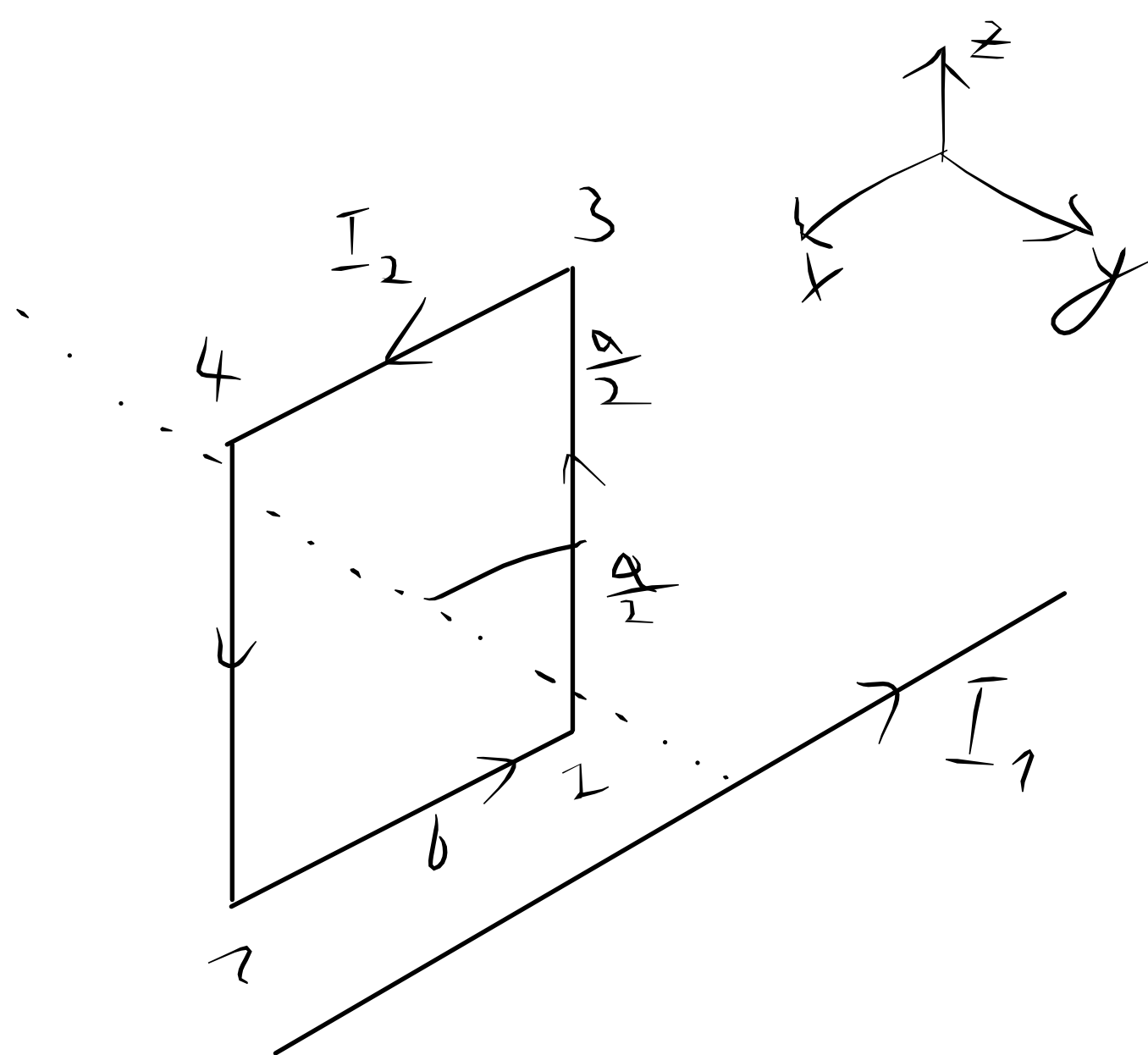
Siły w 14 i 32 znikają.

Teraz siły 12 i 34:

$$B = \frac{\mu_0 I_1}{2\pi r} \qquad r = \sqrt{c^2 + \frac{a^2}{4}}$$

$$F = \sin\left(\frac{\pi}{4}\right) \cdot 2 \cdot B I_2 b$$

$$\vec{F} = \sqrt{2} \, \frac{I_1 I_2 b}{2\pi \sqrt{c^2 + \frac{a^2}{4}}} \, \hat{e}_z$$