Show all work used to find the answer. Include drawings and units! Good luck.

1. Three long, straight, parallel wires each carry a current of 10 A in the positive x direction. If the distance between each wire and the other two is 10 cm, what is the magnitude of the magnetic force on a 20-cm length of either of the wires?

All the equations you need - so far:

\[
\begin{align*}
\mathbf{a} \cdot \mathbf{b} &= a \cdot b \cdot \cos \phi \\
\mathbf{a} \times \mathbf{b} &= a \cdot b \cdot \sin \phi \; \hat{n} \\
\mathbf{v} &= \frac{d\mathbf{r}}{dt} \\
\mathbf{F} &= m \mathbf{a} \\
F &= m v^2 / r \\
\int \mathbf{B} \cdot ds &= \mu_0 i \\
B &= \mu_0 \mu_0 l_0 n \; \text{(solenoid)} \\
\mu_0 &= 4\pi \times 10^{-7} \; \text{T m/A} \\
\Phi_n &= \int \mathbf{B} \cdot d\mathbf{A} \\
Emf &= -N \frac{d\Phi_n}{dt}
\end{align*}
\]