The following problems could be done very easily with vectors and it is recommended to use vectors to solve them.

1. For a triangle ABC, with $|AB| = c$, $|AC| = b$, and $|BC| = a$, let $M$ be the midpoint of $AB$, find $m_c = |CM|$. 

2. For a trapezoid ABCD, with $AB \parallel CD$, $|AB| = a$, $|CD| = b$, let $M$ be the midpoint of $AC$ and $N$ be the midpoint $BD$, find $|MN|$. 