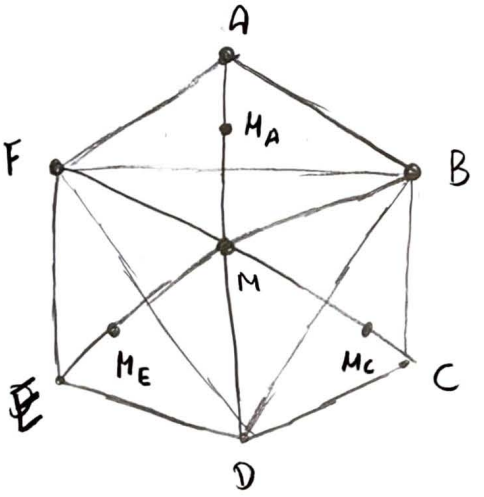
Problema 1 - Guilherme Zeus (Simo 2/Jul) 7/7

Considere um ponto M qualquer no plano. Seja ABCDEF um hexágono regular centrado em M.

Sejam $M_A$, $M_C$, $M_E$ os baricentros de AFB, CBD, EDF. ⇒

⇒ M é baricentro de:

- ACE.
- BDF
- $M_A M_C M_E$.




$$f(M) = f(A) + f(C) + f(E) = f(B) + f(D) + f(F)$$

$$= f(M_A) + f(M_C) - f(M_E) =$$

$$= \Big(f(A) + f(F) + f(B)\Big) + \Big(f(B) + f(C) + f(D)\Big) + \Big(f(D) + f(E) + f(F)\Big)$$

$$= 2 \cdot \Big(f(F) + f(D) + f(B)\Big) + \Big(f(A) + f(C) + f(D)\Big)$$

$$= 3f(M) \Rightarrow f(M) = 0, \quad \forall M.$$

Logo, $f(A) \equiv 0$. □