$P(n): 9^{n+1} - 8n - 9 \vdots 16$

$P(n+1): 9^{n+2} - 8(n+1) - 9 \vdots 16$

$9^{n+2} - 8(n+1) - 9 = 9^{n+1} \cdot 9 - 8(n+1) =$

$= 9(M_{16} + 8n + 9) - 8 \cdot 3n - 64 \vdots 16$

$\vdots 16 \qquad \vdots 16$

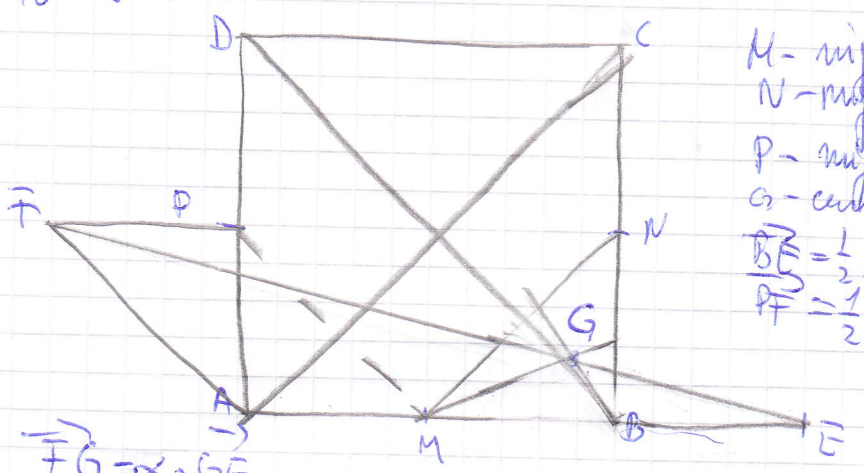
$9^{n+1} - 8n - 9 = M_{16}$

$9^{n+1} = M_{16} + 8n + 9$

Man Cristina 13.(g)

10. a

Oprea Bogdan



M - mijloc AB
N - mijloc BC
P - mijloc AD
G - centru de greutate
$\vec{BE} = \frac{1}{2}\vec{AB}$
$\vec{PF} = \frac{1}{2}\vec{BE}$

$\vec{FG} = \alpha \cdot \vec{GE}$

$\vec{GE} = \vec{GB} + \vec{BE}$

$\vec{GE} = -\vec{BG} + \vec{BE}$

$\vec{GE} = -\left(\frac{\vec{BN} + \vec{BM}}{3}\right) + \frac{\vec{AB}}{2}$

$\vec{GE} = -\left(\frac{\frac{\vec{BC}}{2} + \frac{\vec{BA}}{2}}{3} + \frac{\vec{AB}}{2}\right)$

$\vec{GE} = \frac{\vec{CB} + \vec{AB}}{6} + \frac{3\vec{AB}}{6}$

$\frac{\vec{CB} + 4\vec{AB}}{6} = \vec{GE}$

$\vec{GF} = \vec{GM} + \vec{MA} + \vec{AF}$

$AF = PM$
$PM = \frac{BD}{2}$

$\vec{GF} = -\vec{MG} + \frac{\vec{BA}}{2} + \frac{\vec{BD}}{2}$

$\vec{GF} = \left(\frac{\vec{MN} + \vec{MB}}{3}\right) + \frac{\vec{BA}}{2} + \frac{\vec{BC} + \vec{BA}}{2}$

~~$\left(\vec{GE} = -\left(\frac{\frac{\vec{AB} + \vec{BC}}{2} + \frac{\vec{AB}}{2}}{3}\right)\right)$~~

$\vec{GF} = -\left(\frac{\frac{\vec{AC}}{2} + \frac{\vec{AB}}{2}}{3}\right) + \frac{\vec{BA}}{2} + \frac{\vec{BC} + \vec{BA}}{2}$

$\vec{GF} = -\left(\frac{\frac{\vec{AB} + \vec{BC}}{2}}{3} + \frac{\vec{AB}}{2}\right) + \frac{\vec{BA}}{2} + \frac{\vec{BC} + \vec{BA}}{2}$

$\vec{GF} = \frac{\vec{BA}}{6} + \frac{\vec{CB}}{6} + \frac{\vec{BA}}{2} + \frac{\vec{BA}}{2} + \frac{\vec{BC} + \vec{BA}}{2}$

$\vec{GF} = \frac{\vec{BA}}{6} + \frac{\vec{CB}}{6} + \frac{3\vec{BA}}{6} + \frac{3\vec{BA}}{2} + \frac{3\vec{BC}}{2} + \frac{3\vec{BA}}{2}$

$\vec{GF} = \frac{8\vec{BA} + 2\vec{BC}}{6} = \frac{2(4\vec{BA} + \vec{BC})}{6} \Rightarrow G, F, E$ - coliniare