

Soluție

1. a) $\overrightarrow{BM} = \overrightarrow{BA} + \overrightarrow{AM} \Rightarrow \overrightarrow{BM} = \overrightarrow{BA} + 2\overrightarrow{MC}$

1. b) $3\overrightarrow{BM} = 3\overrightarrow{BA} + 6\overrightarrow{MC} = 3\overrightarrow{BA} + 2\overrightarrow{AC} = \overrightarrow{BA} + 2\overrightarrow{BA} + 2\overrightarrow{AC} = \overrightarrow{BA} + 2\overrightarrow{BC}$

2. a) $m(\sphericalangle DCB) = 180^\circ - m(\sphericalangle DBC) - m(\sphericalangle CDB) \Rightarrow$

$m(\sphericalangle DBC) = 45^\circ$ și $m(\sphericalangle CDB) = 120^\circ \Rightarrow m(\sphericalangle DCB) = 15^\circ$.

2. b) În triunghiul dreptunghic ADC $m(\sphericalangle ACD) = 45^\circ - m(\sphericalangle BCD) = 30^\circ \Rightarrow CD = \frac{AC}{\cos 30^\circ} = \frac{3\sqrt{3}}{\frac{\sqrt{3}}{2}} = 6$.

3. a) $A \in d \Leftrightarrow x_A - 2y_A = 0$

$x_A - 2y_A = 2 - 2 \cdot 1 = 0 \Rightarrow A \in d$

3. b) $d: y = \frac{1}{2}x \Rightarrow m_d = \frac{1}{2} \cdot m_{AB} = \frac{y_B - y_A}{x_B - x_A} = -2 \Rightarrow m_{AB} \cdot m_d = -1 \Rightarrow d \perp AB$