

**Soluție**

1. a)  $\overrightarrow{CM} = \overrightarrow{CD} + \overrightarrow{DM} = -\overrightarrow{AB} + \frac{1}{4} \cdot \overrightarrow{DB} = -\overrightarrow{AB} + \frac{1}{4} \cdot (\overrightarrow{DA} + \overrightarrow{AB}) = -\frac{1}{4} \cdot \overrightarrow{AD} - \frac{3}{4} \cdot \overrightarrow{AB}.$

b)  $\overrightarrow{CC'} = \frac{1}{2} \cdot (\overrightarrow{CA} + \overrightarrow{CB}), \overrightarrow{CG} = \frac{2}{3} \cdot \overrightarrow{CC'} = \frac{1}{3} \cdot (\overrightarrow{CA} + \overrightarrow{CB}).$

2. a)  $BC \cdot \cos A + AB \cdot \cos C = BC \cdot \frac{AB}{AC} + AB \cdot \frac{BC}{AC}, 2 \cdot AC \cdot \sin A \cdot \sin C = 2 \cdot AC \cdot \frac{BC}{AC} \cdot \frac{AB}{AC}.$

b)  $\cos B = \frac{AB^2 + BC^2 - AC^2}{2 \cdot AB \cdot BC}, AB = \frac{8}{15} \cdot BC, AC = \frac{17}{15} \cdot BC, \cos B = 0, m(\sphericalangle B) = 90^\circ.$

3. a)  $m_d = \frac{3}{2}, \text{ deci } m_p = \frac{-2}{3}; p: 2x + 3y - 9 = 0.$

b)  $2x + 3y - 9 = 0, 3x - 2y + 6 = 0; x = 0, y = 3.$