

**Soluție**

1. ,  $b_3^2 = 6 \cdot 24 \Rightarrow b_3 = 12$   $q = \frac{b_3}{b_2} = 2 \Rightarrow b_1 = 3$ .

2.  $3 - m^2 > 0 \Rightarrow m \in (-\sqrt{3}; \sqrt{3})$ .

3.  $\sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}, \sin \frac{2\pi}{3} = \frac{\sqrt{3}}{2} \Rightarrow \sin \frac{3\pi}{3} = 0, \sin \frac{4\pi}{3} = -\frac{\sqrt{3}}{2}$ ,  
 $\sin \frac{\pi}{3} + \sin \frac{2\pi}{3} + \sin \frac{3\pi}{3} + \sin \frac{4\pi}{3} = \frac{\sqrt{3}}{2}$ .

4. Numărul cazurilor posibile este:  $3^3$ . Numărul cazurilor favorabile este :  $3! = 6 \Rightarrow p = \frac{2}{9}$ .

5.  $\frac{GP}{AB} = \frac{1}{3}, \overrightarrow{GP} = \frac{1}{3} \overrightarrow{AB} \Rightarrow m = \frac{1}{3}$ .

6.  $\cos 2\alpha = 2\cos^2 \alpha - 1 \Rightarrow \cos 2\alpha = \frac{-7}{9}$ .