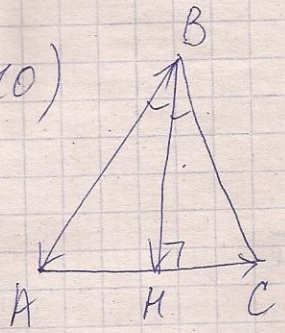
8) $\bar{m} \cdot \bar{n} = x_1 \cdot x_2 + y_1 \cdot y_2 = 3 \cdot 4 + 1 \cdot (-6) = 12 - 6 = 6$

10)



$\overline{AB} \cdot \overline{AC} = 10 \cdot 10 \cos 60° =$

$= 10 \cdot 10 \cdot \frac{1}{2} = 50$

$\overline{BA} \cdot \overline{BH} = 10 \cdot 5\sqrt{3} \cdot \cos 30° =$

$= 10 \cdot 5\sqrt{3} \cdot \frac{\sqrt{3}}{2} = \frac{10 \cdot 5 \cdot 3}{2} =$

$= 75$

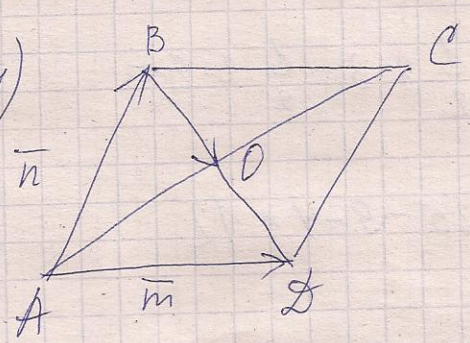
Из $\triangle ABH$ найдем

$BH : \sin 60° = \frac{BH}{AB}$;

$\frac{\sqrt{3}}{2} = \frac{BH}{10}$; $BH = 5\sqrt{3}$

BH – высота и медиана в $\triangle ABC$.

11)



$\overline{AB} + 2\overline{BO} = \overline{AD}$

$2\overline{BO} = \overline{AD} - \overline{AB}$

$\overline{BO} = \frac{1}{2}\overline{AD} - \frac{1}{2}\overline{AB} = \frac{1}{2}\bar{m} - \frac{1}{2}\bar{n}$.