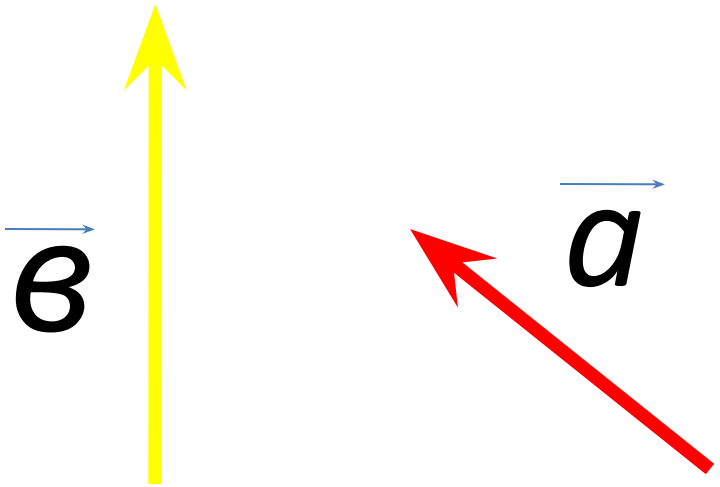
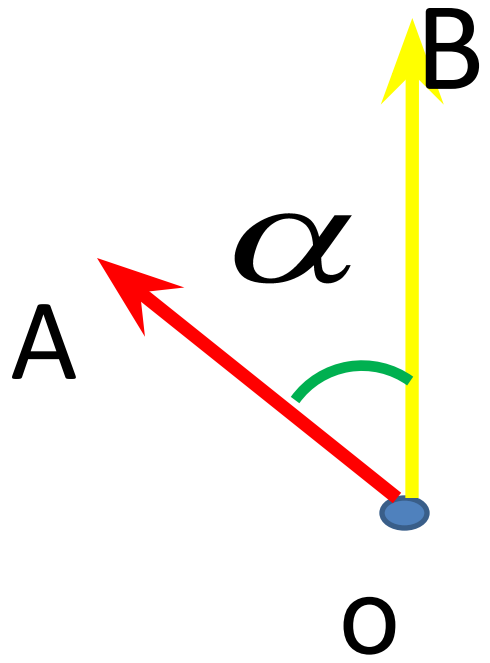
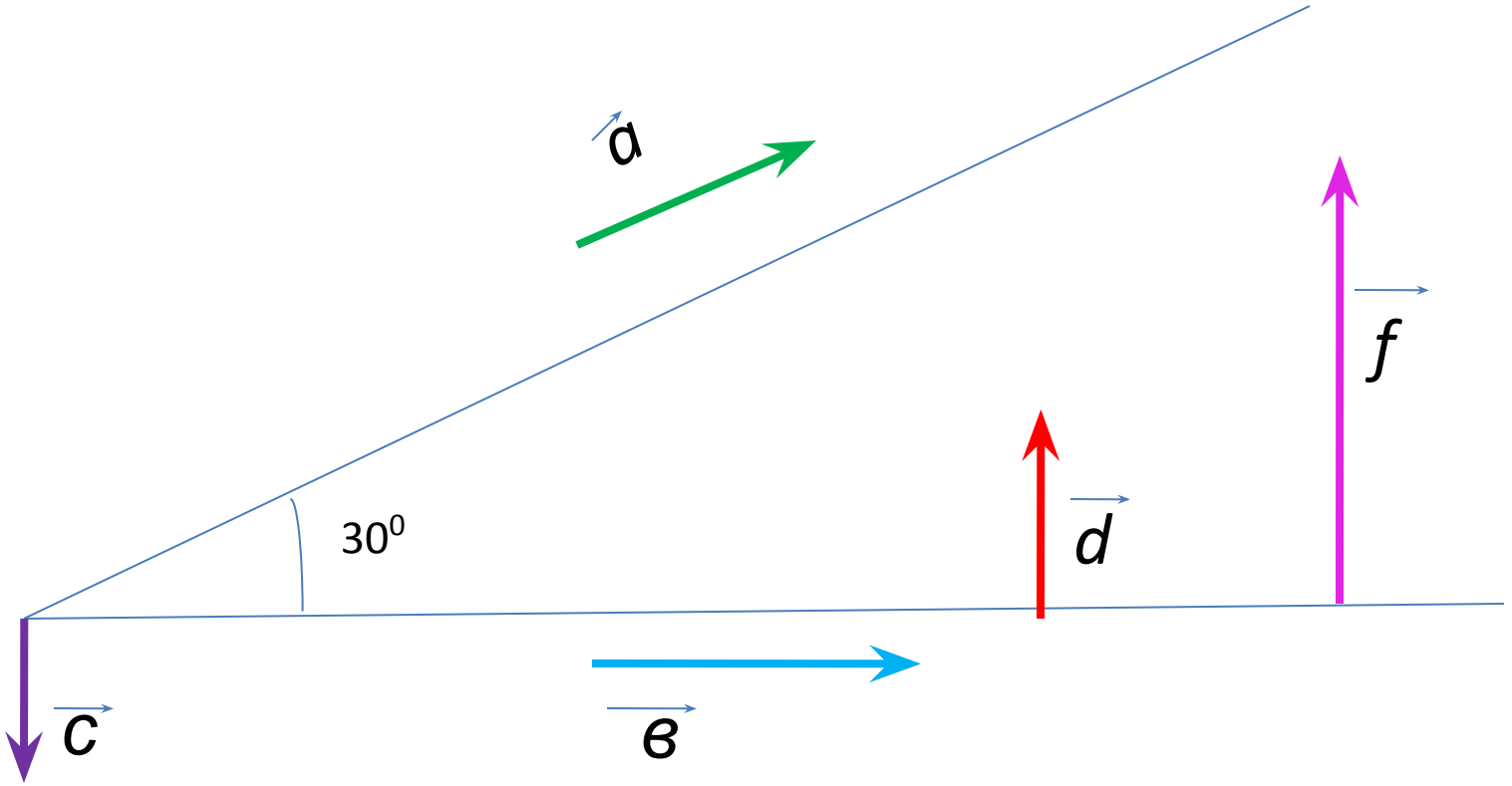
1.Угол между векторами.

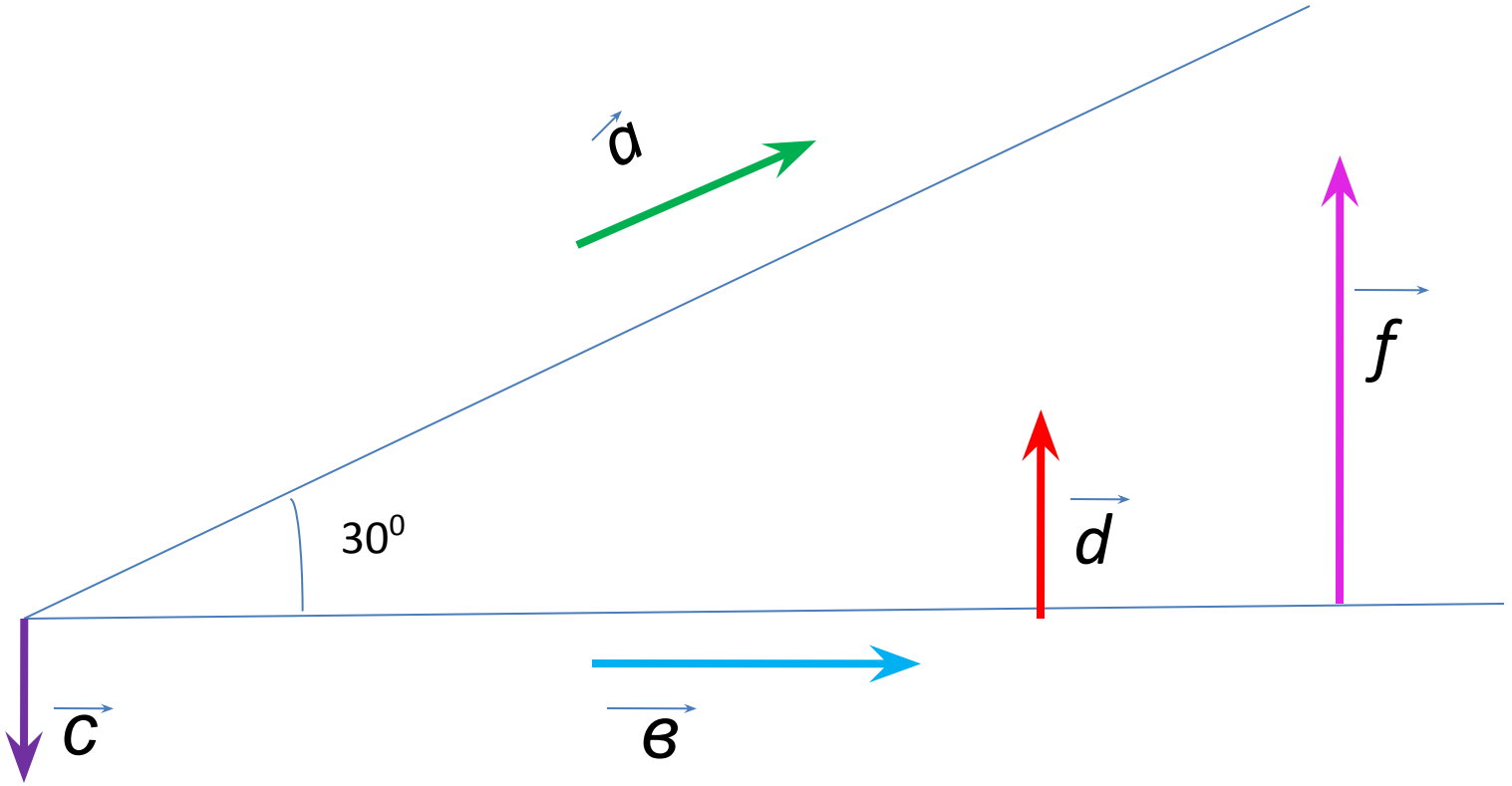


$$\alpha = \square\hat{}\square$$

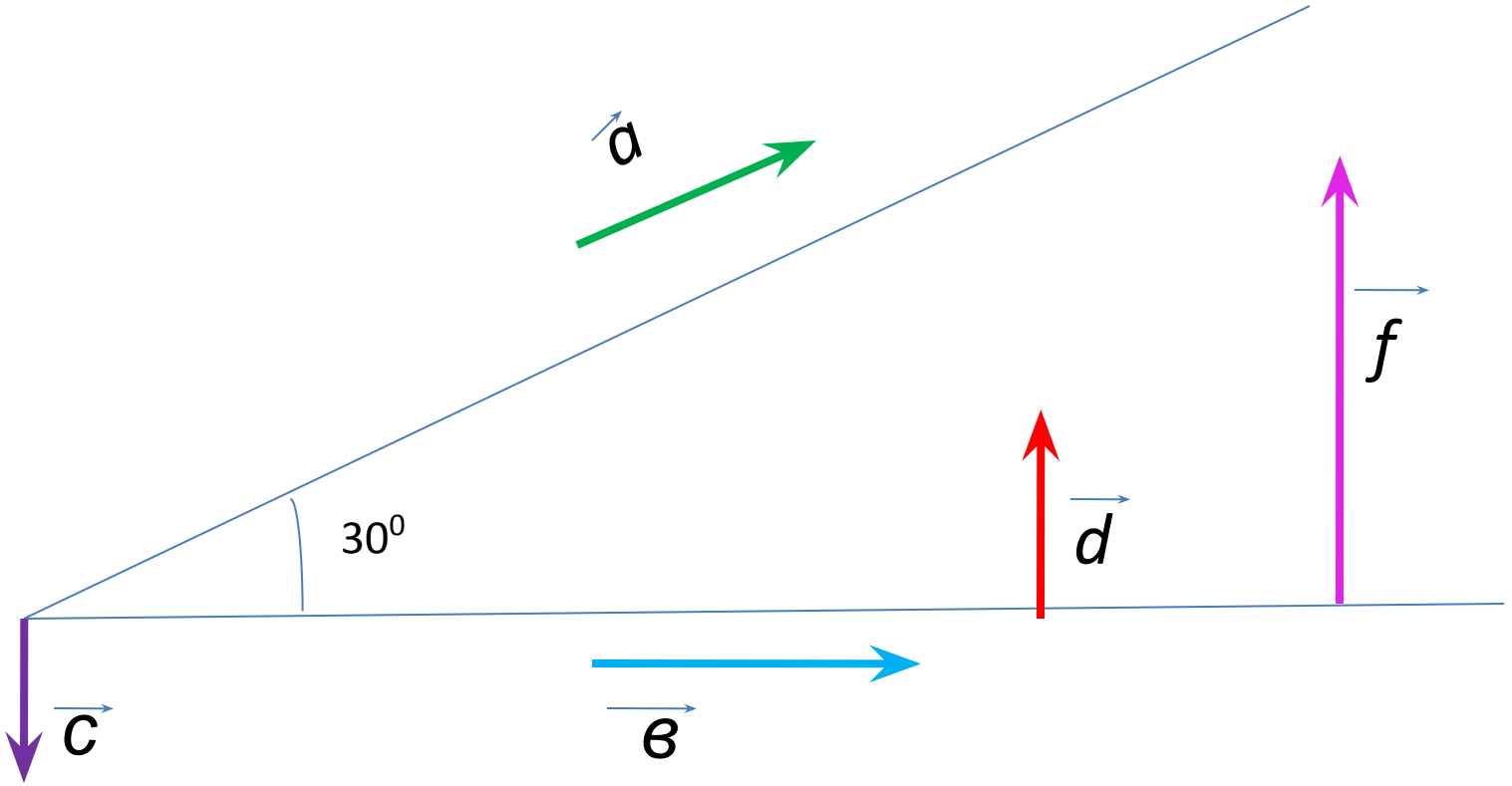




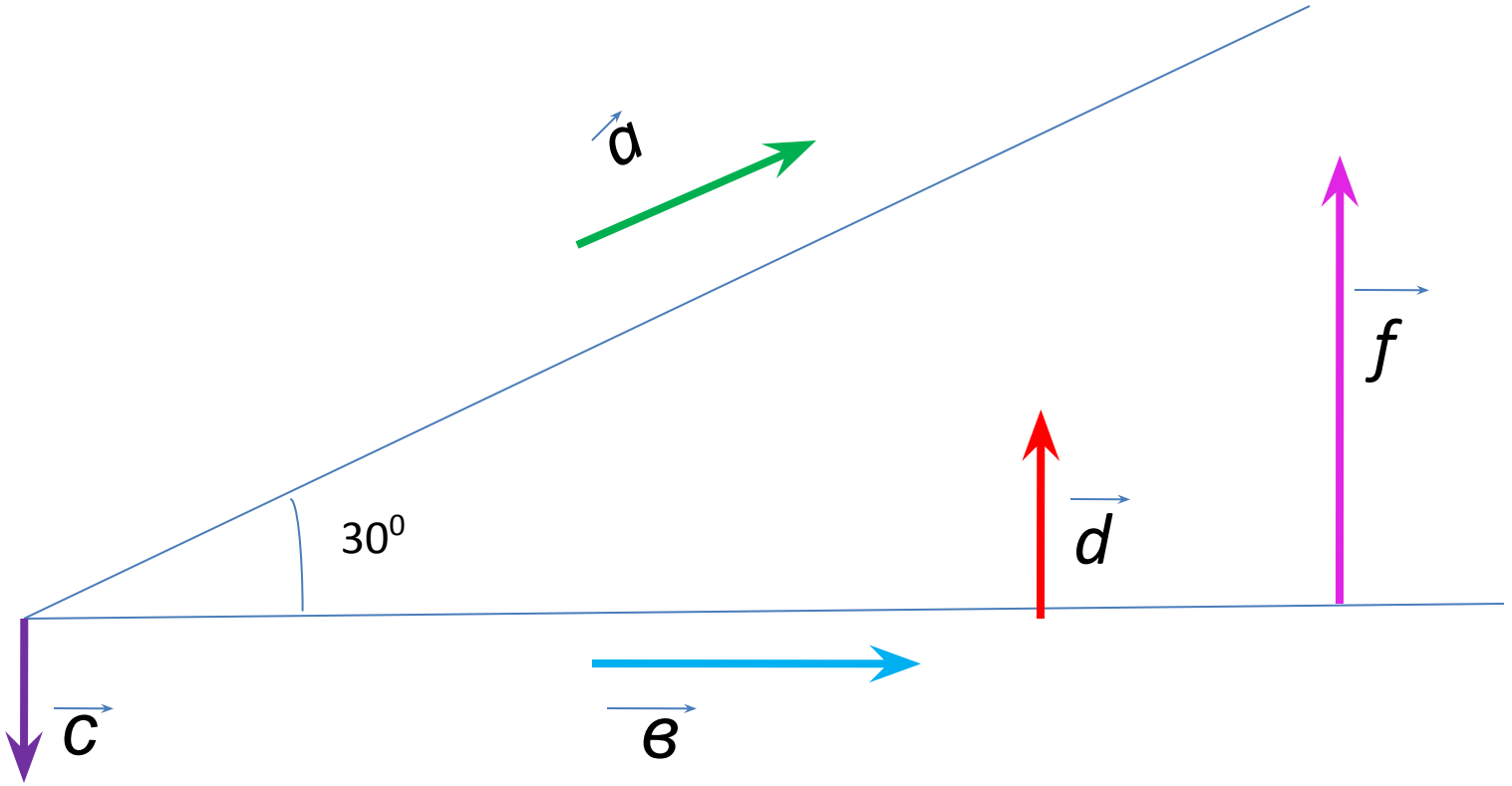
$$\vec{a} \wedge \vec{b} = 30^0$$



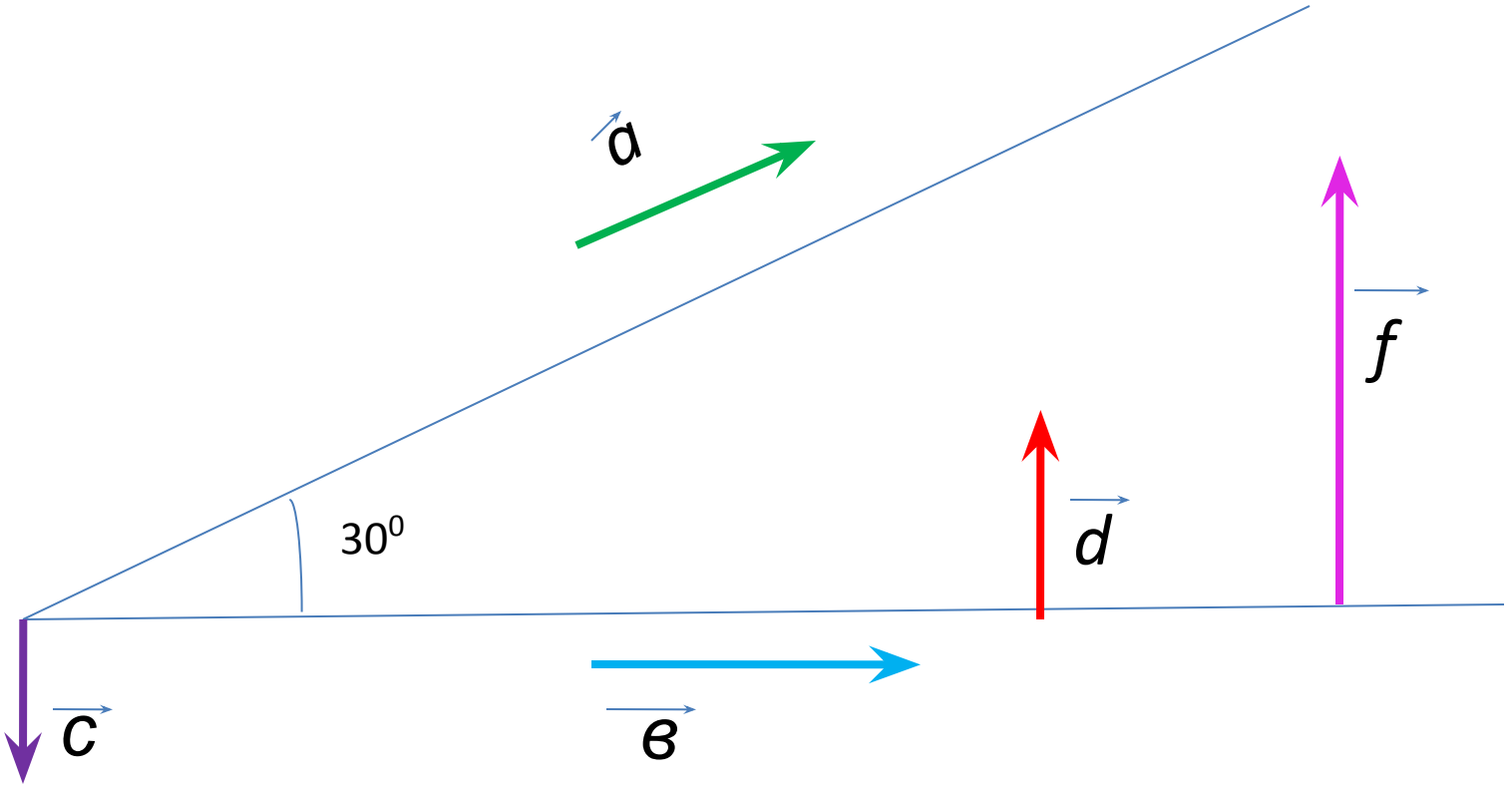
$$\vec{a} \wedge \vec{c} = 120^0$$



$$\vec{d} \wedge \vec{f} = 0^0$$



$$\angle(\vec{d}, \vec{c}) = 180^{0}$$



$\angle(\vec{a},\vec{b}) = 30^0 \quad \angle(\vec{a},\vec{c}) = 120^0 \quad \angle(\vec{b},\vec{c}) = 90^0$

$\angle(\vec{d},\vec{f}) = 0^0 \quad \angle(\vec{d},\vec{c}) = 180^0$

$\vec{b} \perp \vec{c} \quad \vec{b} \perp \vec{d} \quad \vec{b} \perp \vec{f}$

2.Скалярное произведение векторов.

$$\vec{a} \cdot \vec{b} = |\vec{a}| \cdot |\vec{b}| \cdot \cos \widehat{\vec{a}\,\vec{b}}$$

Законы:

1) $\vec{a} \cdot \vec{b} = 0 \Leftrightarrow \vec{a} \perp \vec{b}$

2) $\vec{a} \cdot \vec{b} > 0 \Leftrightarrow 0 \le (\vec{a}, \vec{b}) < 90$

3) $\vec{a} \cdot \vec{b} < 0 \Leftrightarrow 90 < (\vec{a}, \vec{b}) \le 180$

4) $\vec{a} \cdot \vec{b} = |\vec{a}| \cdot |\vec{b}| \Leftrightarrow \vec{a} \uparrow\uparrow \vec{b} = 0$

5) $\vec{a} \cdot \vec{b} = \vec{a}^2 = |\vec{a}|^2$