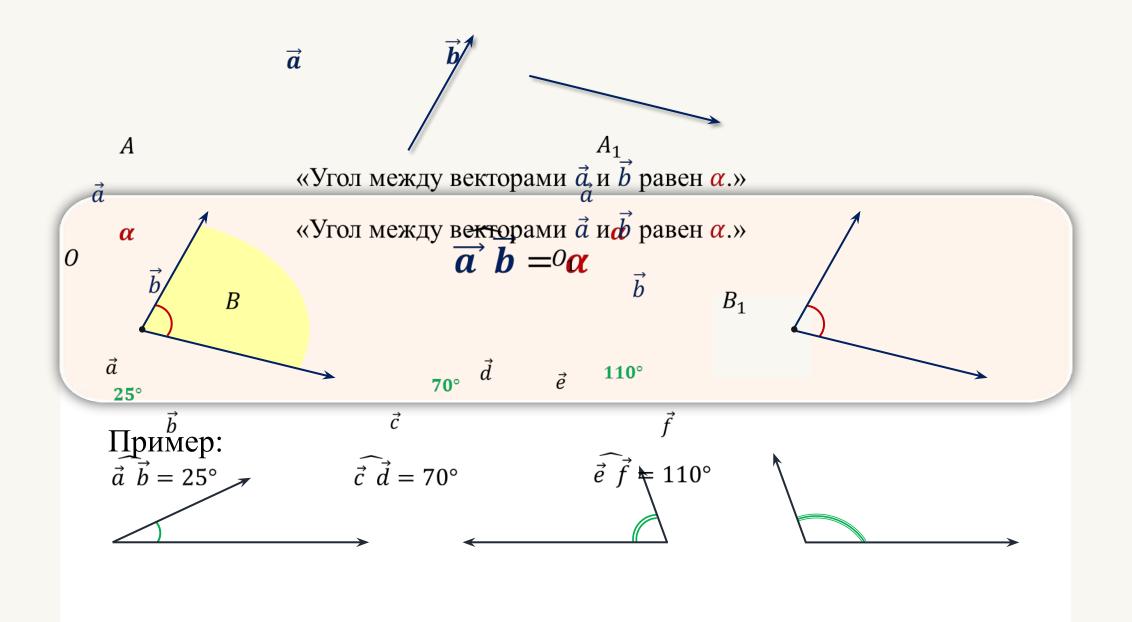
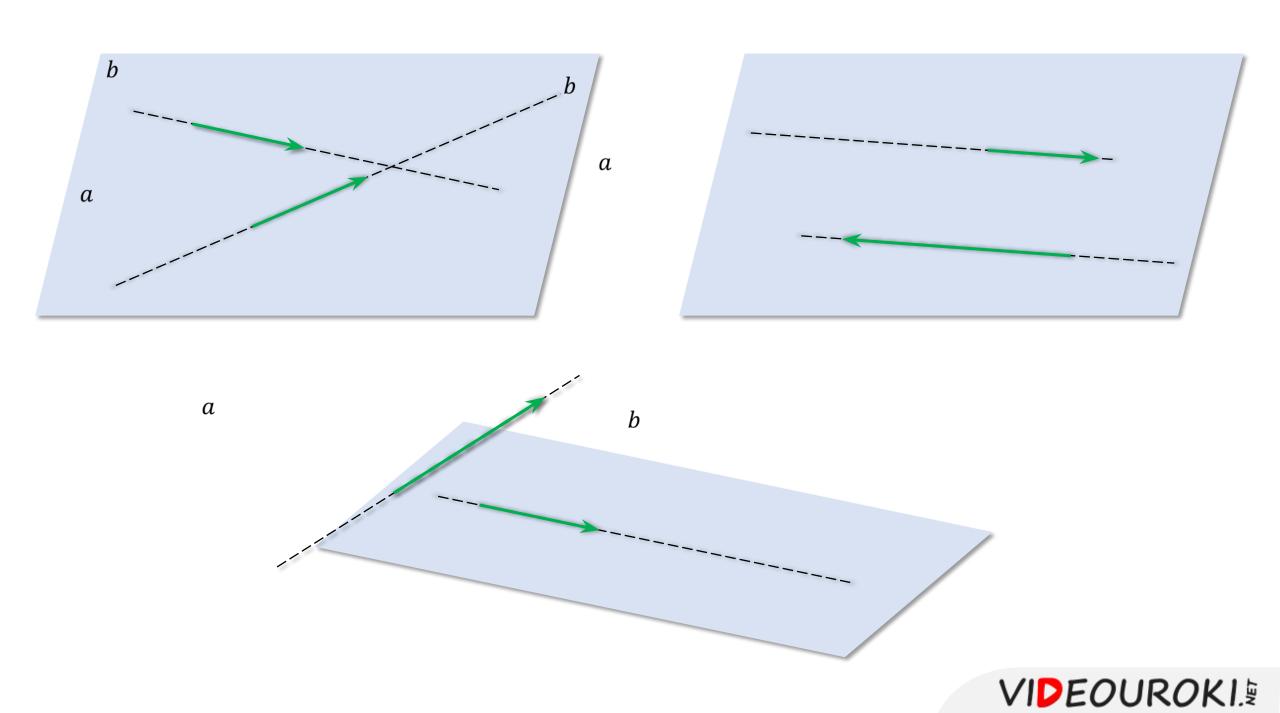
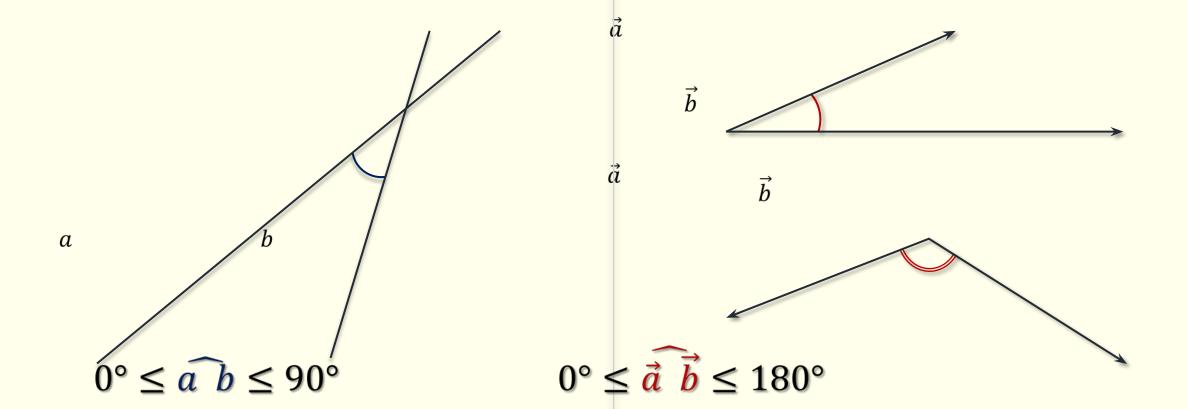
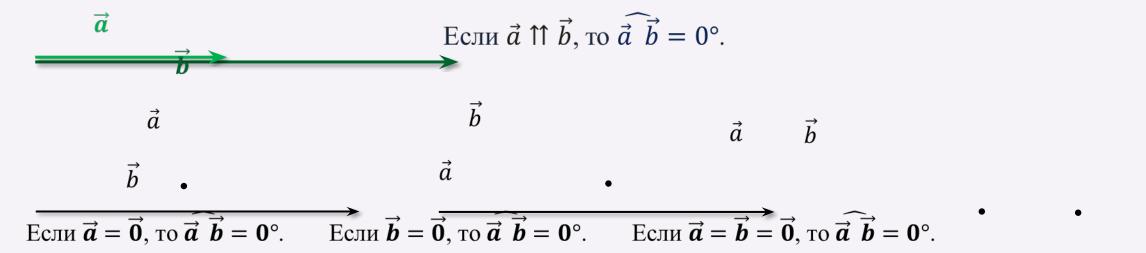
Угол между векторами

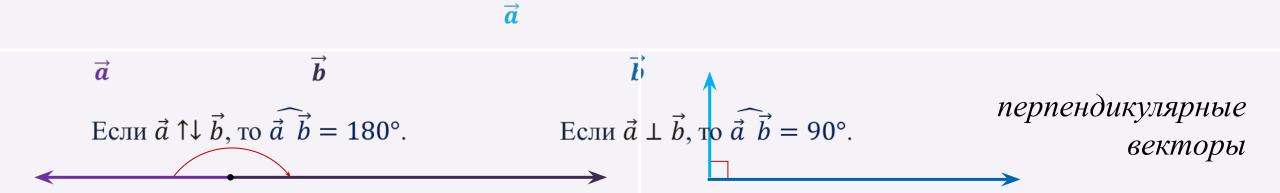












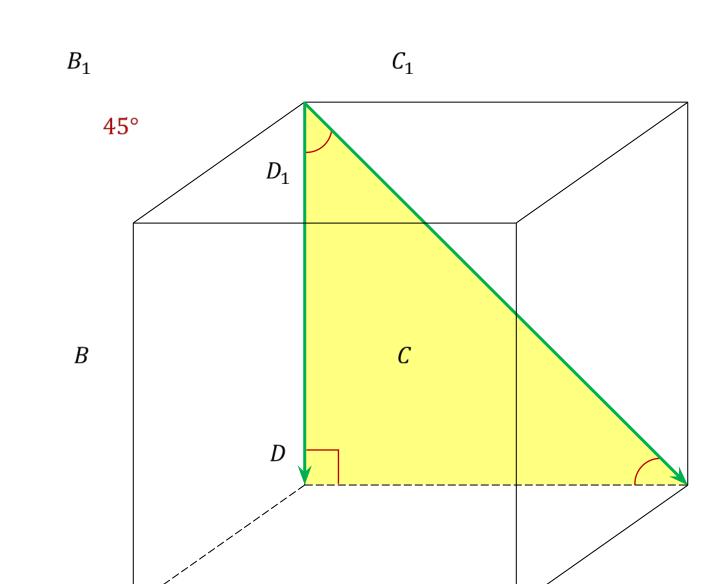
VIDEOUROKI.

- a) $\widehat{B_1B} \widehat{B_1C} = 4!$
- б) $\overrightarrow{DA} \ \widehat{\overline{B_1}D_1}$
- в) $\widehat{\overline{A_1C_1}} \stackrel{\frown}{\overline{A_1B_1}}$

 A_1

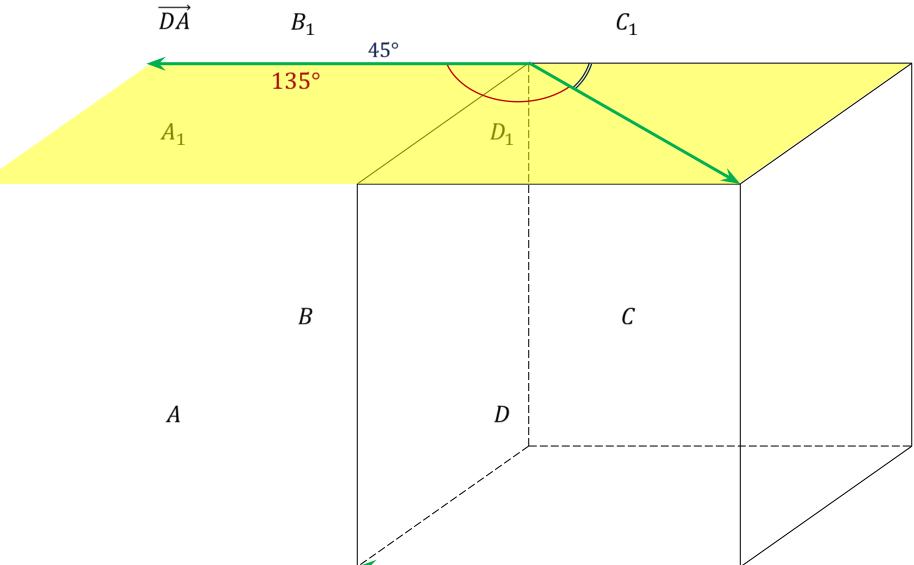
 \boldsymbol{A}

- $\Gamma) \, \widehat{\overrightarrow{BC}} \, \, \overline{\overrightarrow{AC}}$
- д) $\widehat{BB_1}$ \overrightarrow{AC}
- e) $\widehat{B_1C} \stackrel{\frown}{AD_1}$
- ж) $\widehat{A_1D_1}$ \overrightarrow{BC}
- 3) $\overrightarrow{AA_1} \overrightarrow{C_1C}$

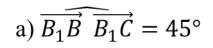


VIDEOUROKI.



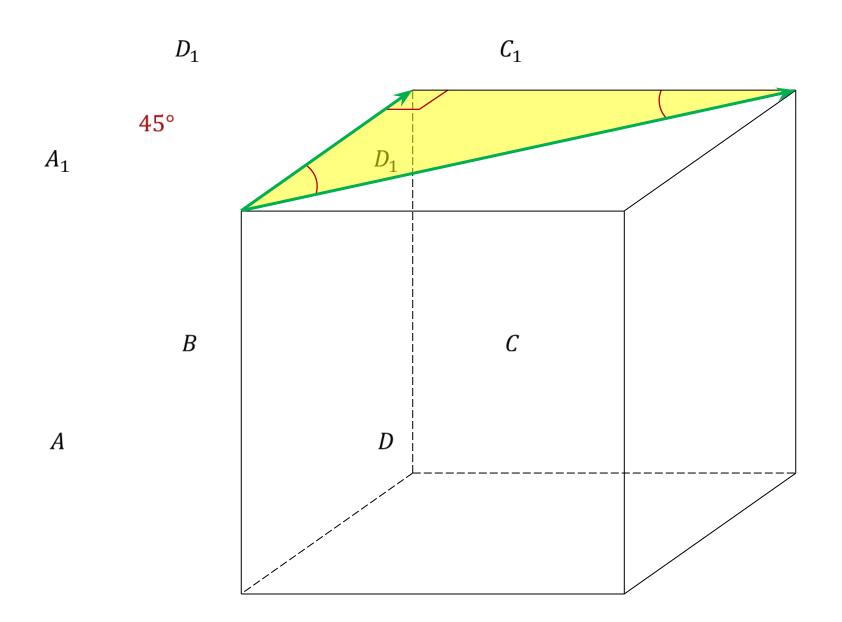






б)
$$\overrightarrow{DA} \ \overrightarrow{B_1D_1} = 135^\circ$$

$$\mathbf{B}) \; \widehat{A_1 C_1} \; \widehat{\overline{A_1 B_1}} = 45^{\circ}$$



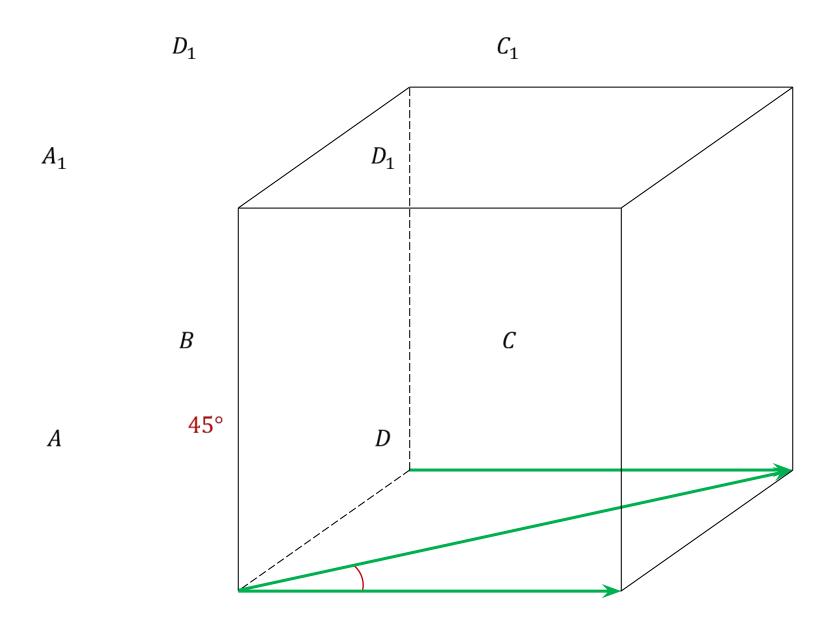


a)
$$\widehat{B_1B} \ \widehat{B_1C} = 45^{\circ}$$

б)
$$\overrightarrow{DA} \ \overrightarrow{B_1D_1} = 135^{\circ}$$

B)
$$\widehat{A_1C_1} \stackrel{\frown}{A_1B_1} = 45^{\circ}$$

$$\Gamma$$
) \overrightarrow{BC} \overrightarrow{AC} = 45°





a)
$$\widehat{B_1B} \ \widehat{B_1C} = 45^{\circ}$$

б)
$$\overrightarrow{DA} \ \overrightarrow{B_1D_1} = 135^\circ$$

в)
$$\overrightarrow{A_1C_1}$$
 $\overrightarrow{A_1B_1} = 45^\circ$

$$\Gamma$$
) \overrightarrow{BC} \overrightarrow{AC} = 45°

д)
$$\widehat{\overline{BB_1}} \, \widehat{\overline{AC}} = 90^{\circ} \implies \overline{BB_1} \perp \overline{AC}$$

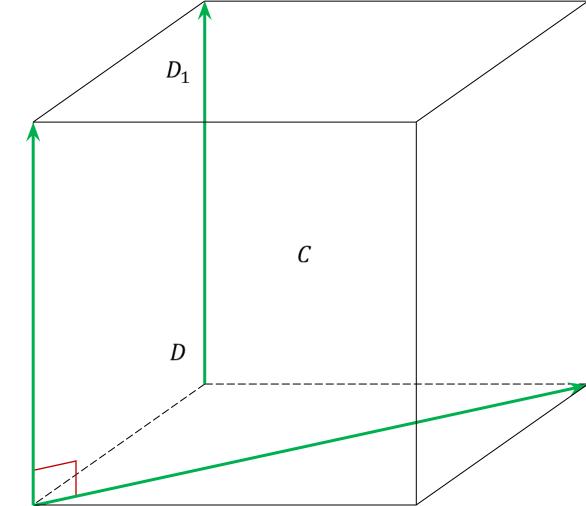
 \boldsymbol{A}

 A_1

$$D_1$$

В







a)
$$\widehat{B_1B} \ \widehat{B_1C} = 45^{\circ}$$

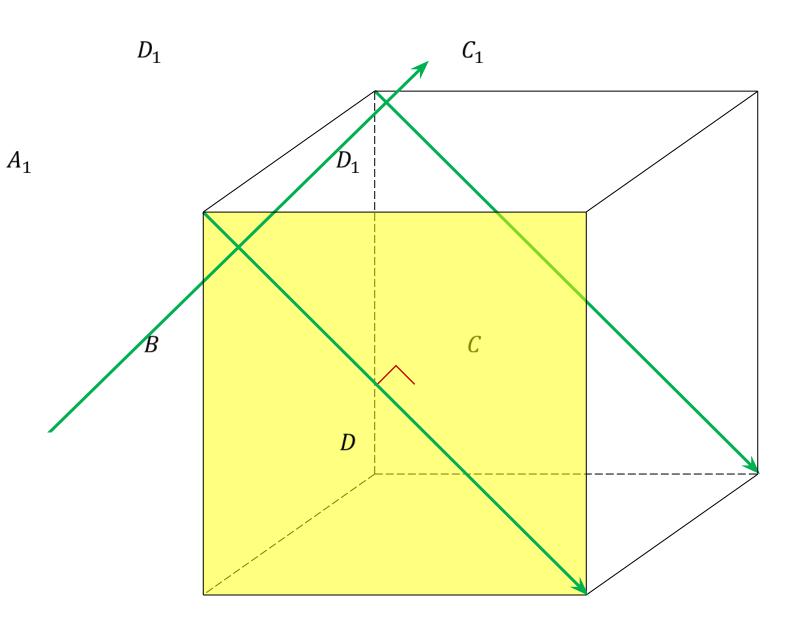
6)
$$\overrightarrow{DA} \ \widehat{\overline{B_1}D_1} = 135^{\circ}$$

$$\mathbf{B})\; \widehat{\overline{A_1C_1}}\; \widehat{\overline{A_1B_1}} = 45^{\circ}$$

$$\Gamma$$
) \overrightarrow{BC} \overrightarrow{AC} = 45°

д)
$$\overrightarrow{BB_1} \overrightarrow{AC} = 90^{\circ} \implies \overrightarrow{BB_1} \perp \overrightarrow{AC}$$

e)
$$\overrightarrow{B_1C} \overrightarrow{AD_1} = 90^{\circ} \implies \overrightarrow{B_1C} \perp \overrightarrow{AD_1}$$



a)
$$\widehat{B_1B} \ \widehat{B_1C} = 45^{\circ}$$

6)
$$\overrightarrow{DA} \ \widehat{\overline{B_1}D_1} = 135^{\circ}$$

$$\overrightarrow{A_1C_1} \overrightarrow{A_1B_1} = 45^{\circ}$$

$$A_1$$

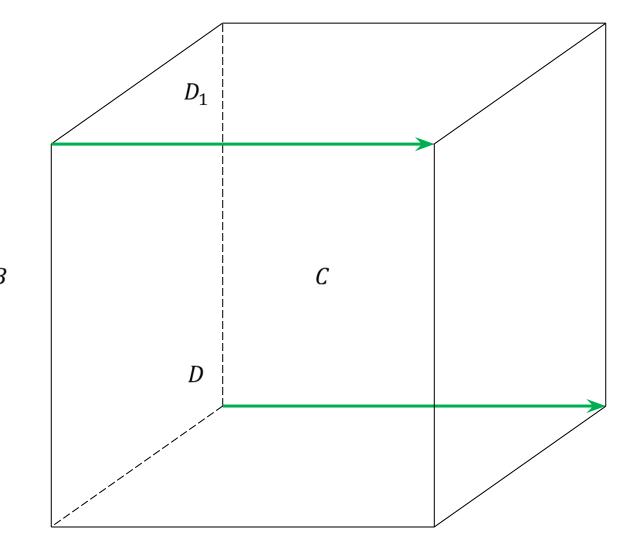
$$\Gamma$$
) \overrightarrow{BC} \overrightarrow{AC} = 45°

д)
$$\overrightarrow{BB_1} \overrightarrow{AC} = 90^{\circ} \implies \overrightarrow{BB_1} \perp \overrightarrow{AC}$$

e)
$$\widehat{B_1C} \stackrel{\frown}{AD_1} = 90^{\circ} \implies \widehat{B_1C} \perp \widehat{AD_1}$$

ж)
$$\widehat{\overline{A_1D_1}}\ \overrightarrow{BC}=0^\circ$$
, так как $\overline{A_1D_1}\ \uparrow\uparrow\ \overrightarrow{BC}$

 D_1



 \mathcal{C}_1

 \boldsymbol{A}

a)
$$\widehat{B_1B} \ \widehat{B_1C} = 45^{\circ}$$

б)
$$\overrightarrow{DA} \ \widehat{\overline{B_1}D_1} = 135^\circ$$

$$\overrightarrow{A_1C_1} \overrightarrow{A_1B_1} = 45^{\circ}$$

$$A_1$$

$$\Gamma$$
) \overrightarrow{BC} \overrightarrow{AC} = 45°

д)
$$\overrightarrow{BB_1} \overrightarrow{AC} = 90^{\circ} \implies \overrightarrow{BB_1} \perp \overrightarrow{AC}$$

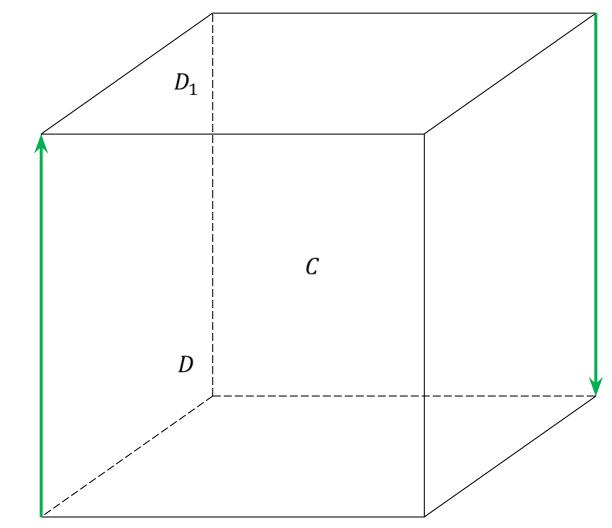
e)
$$\overrightarrow{B_1C} \overrightarrow{AD_1} = 90^{\circ} \implies \overrightarrow{B_1C} \perp \overrightarrow{AD_1}$$

ж)
$$\widehat{\overline{A_1D_1}}\ \overrightarrow{BC}=0^\circ$$
, так как $\overline{A_1D_1}\ \uparrow\uparrow\ \overrightarrow{BC}$

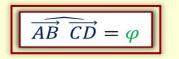
3)
$$\overrightarrow{AA_1} \ \overrightarrow{C_1C} = 180^\circ$$
, так как $\overrightarrow{AA_1} \uparrow \downarrow \overrightarrow{C_1C}$

$$D_1$$







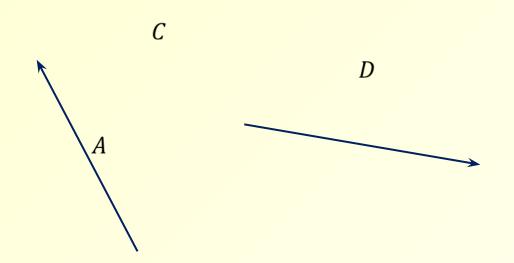


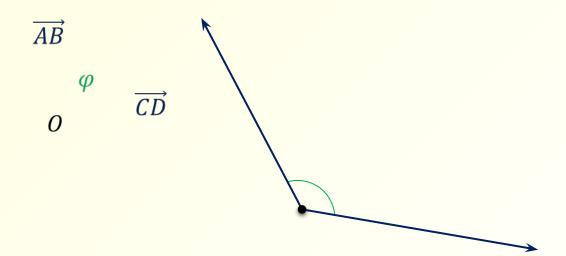
$$\widehat{\overrightarrow{BA}}\widehat{\overrightarrow{DC}}$$

$$\widehat{BA}\widehat{CD}$$



В

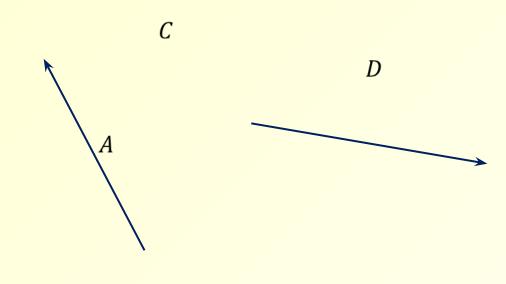




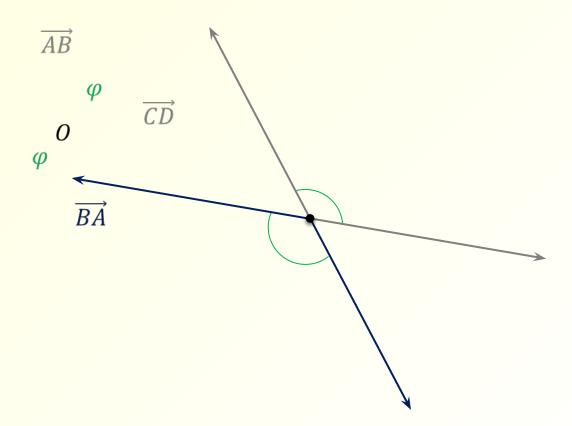
$$\overrightarrow{\overrightarrow{AB} \ \overrightarrow{CD}} = \varphi$$

$$\widehat{\overrightarrow{BA}} \ \widehat{\overrightarrow{DC}} = \varphi$$





 \overrightarrow{DC}



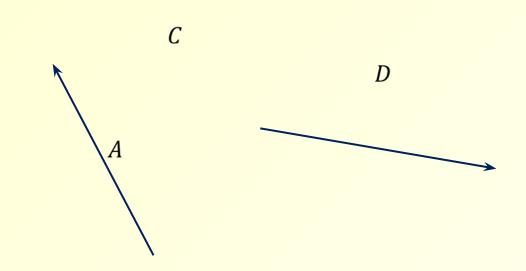
$$\overrightarrow{\overrightarrow{AB} \ \overrightarrow{CD}} = \varphi$$

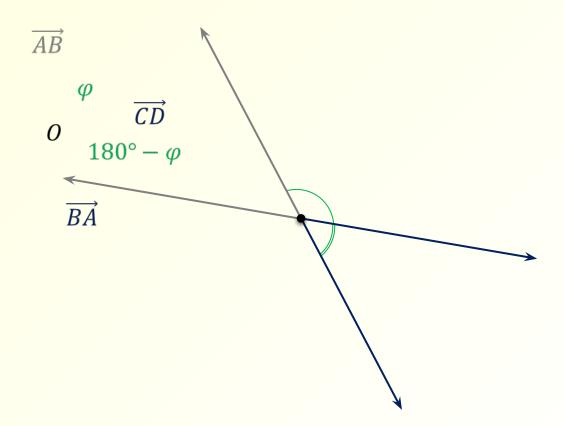
$$\widehat{\overrightarrow{BA}}\widehat{\overrightarrow{DC}} = \varphi$$

$$\overrightarrow{\overrightarrow{BA}} \overrightarrow{\overrightarrow{CD}} = 180^{\circ} - \varphi$$

 \overrightarrow{DC}

В



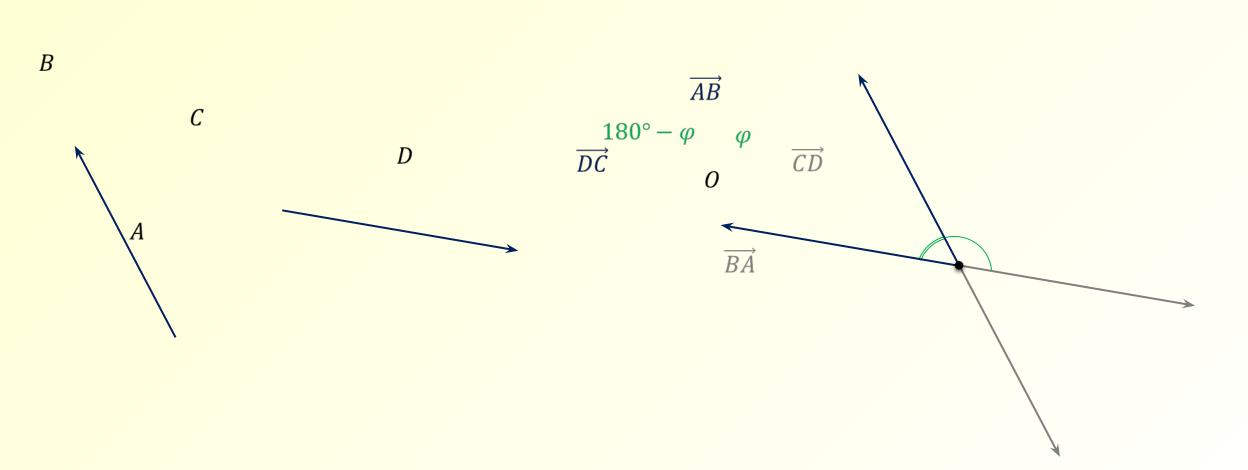


$$\overrightarrow{AB} \ \overrightarrow{CD} = \varphi$$

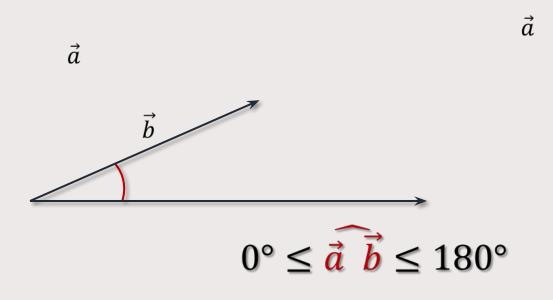
$$\widehat{\overrightarrow{BA}} \widehat{\overrightarrow{DC}} = \varphi$$

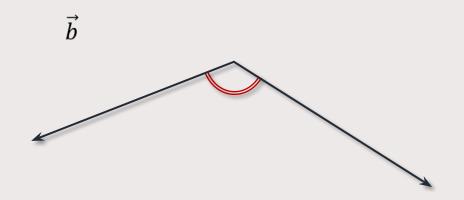
$$\widehat{\overrightarrow{BA}} \widehat{\overrightarrow{CD}} = 180^{\circ} - \varphi$$

$$\overrightarrow{\overrightarrow{AB}} \ \overrightarrow{\overrightarrow{DC}} = 180^{\circ} - \varphi$$



Угол между векторами





Угол между векторами

