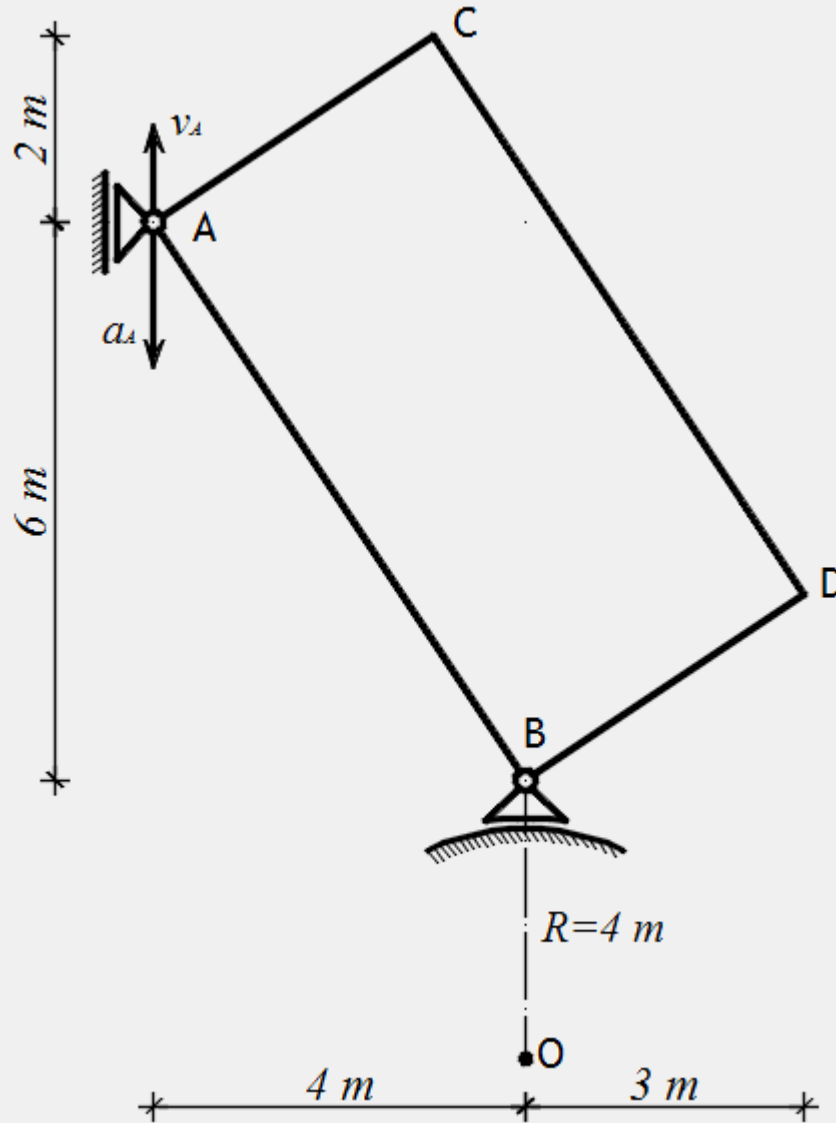


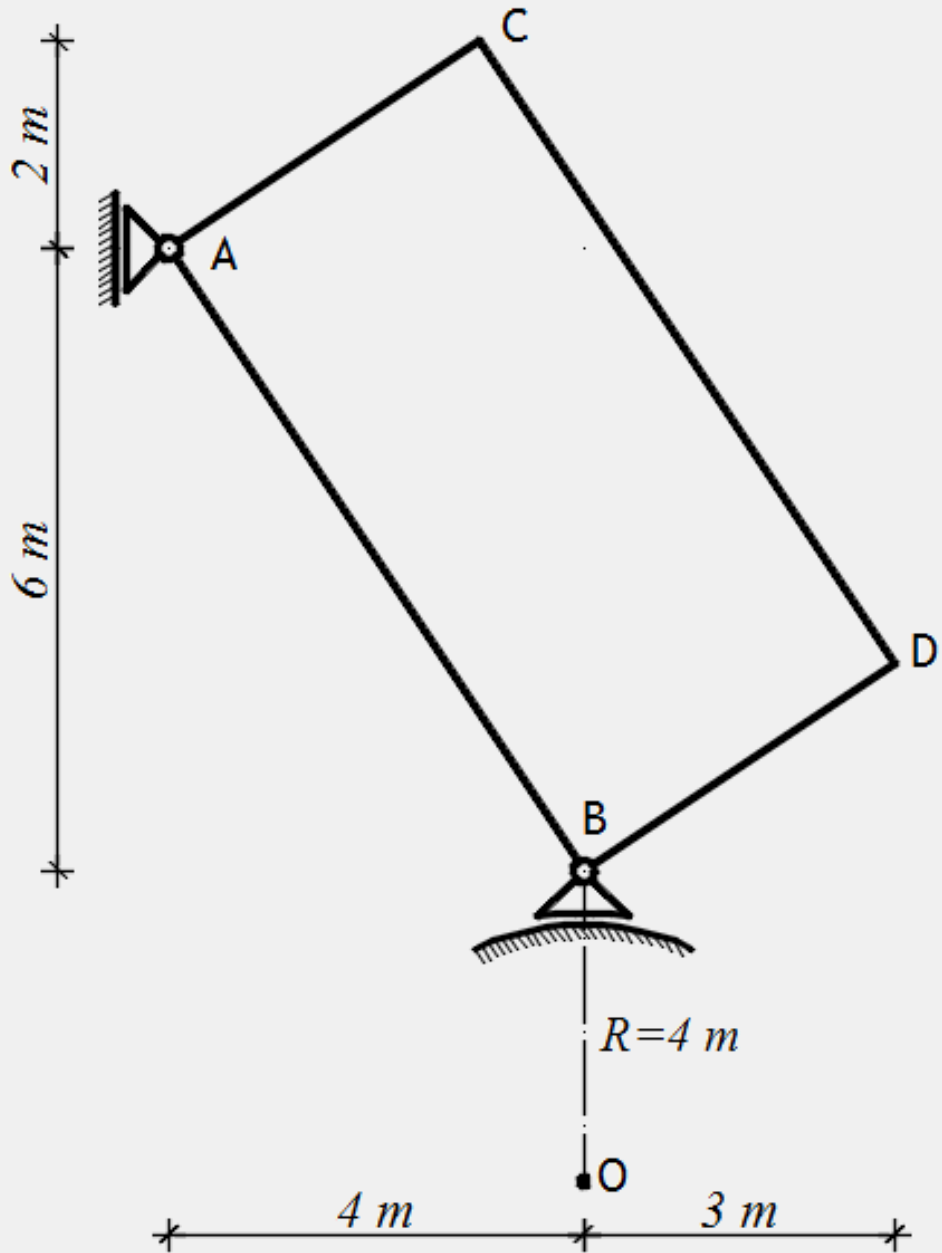
**Grafoanalitičkim postupkom treba odrediti brzine i ubrzanja svih označenih točaka pravokutne ploče, kutnu brzinu i kutno ubrzanje ploče te kutnu brzinu i kutno ubrzanje klizača B oko točke O. Poznata je brzina i ubrzanje točke A.**

$$v_A = 4 \text{ m/s}$$

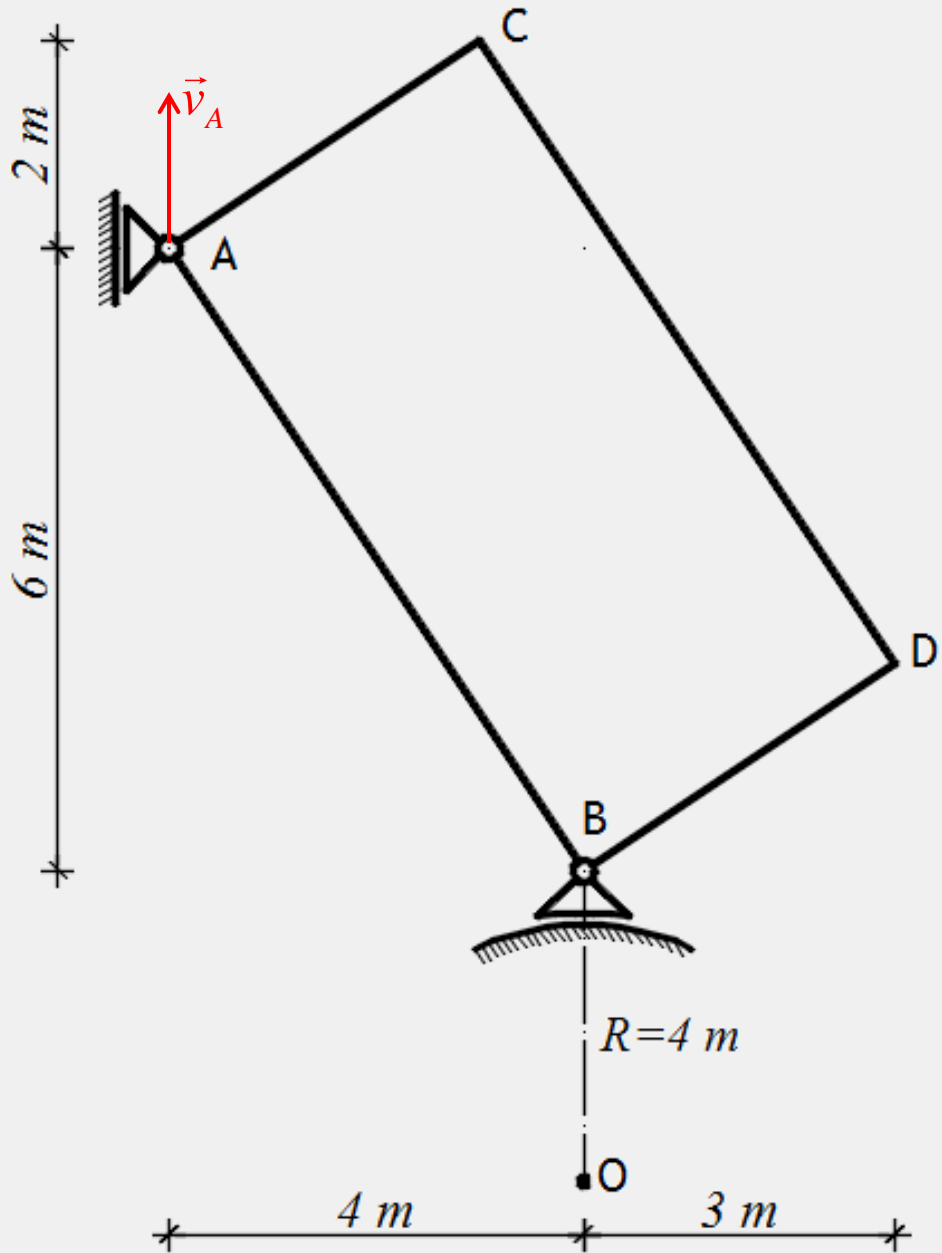
$$a_A = 7 \text{ m/s}^2$$



**BRZINE**

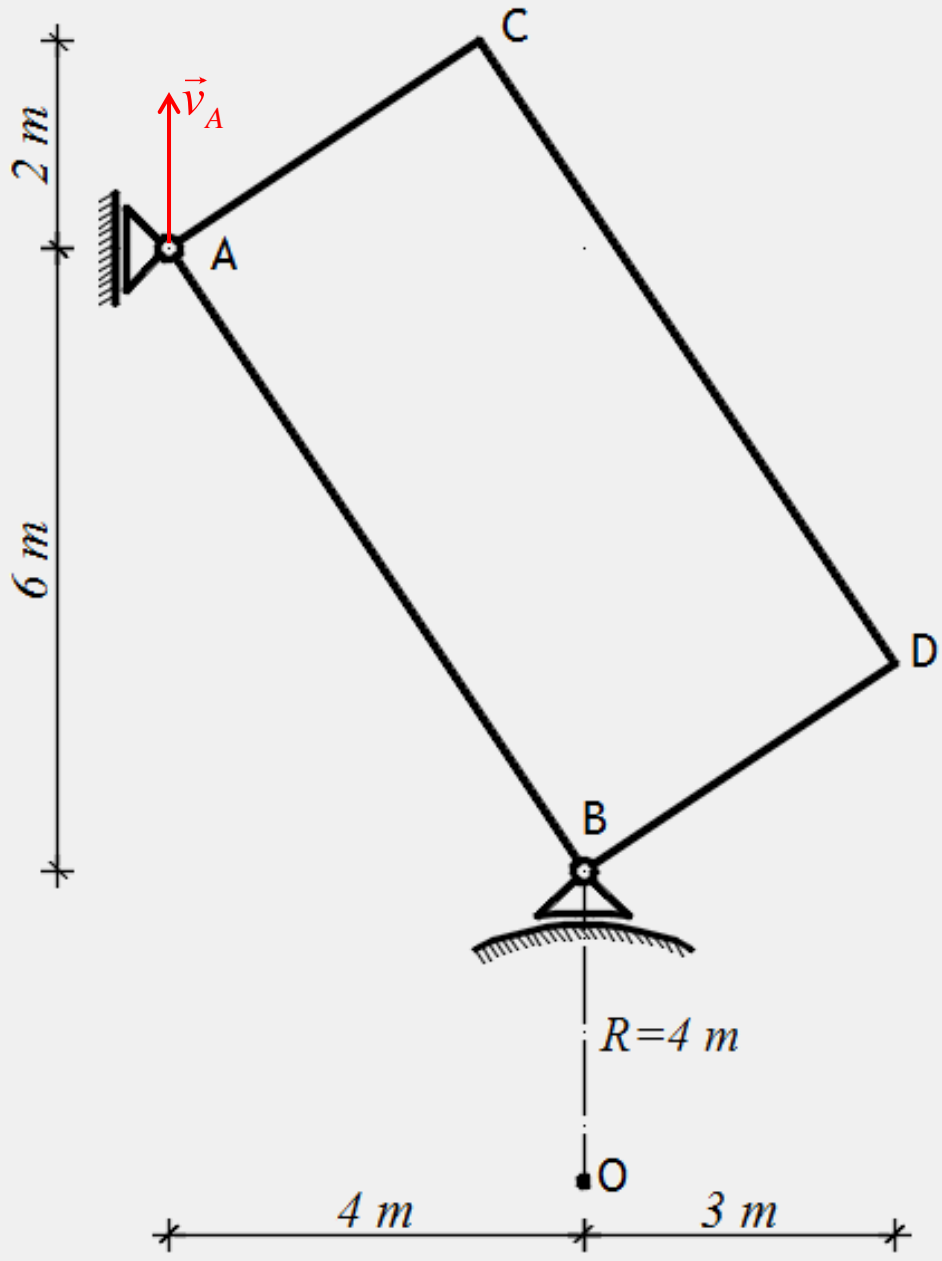


**BRZINE**



**BRZINE**

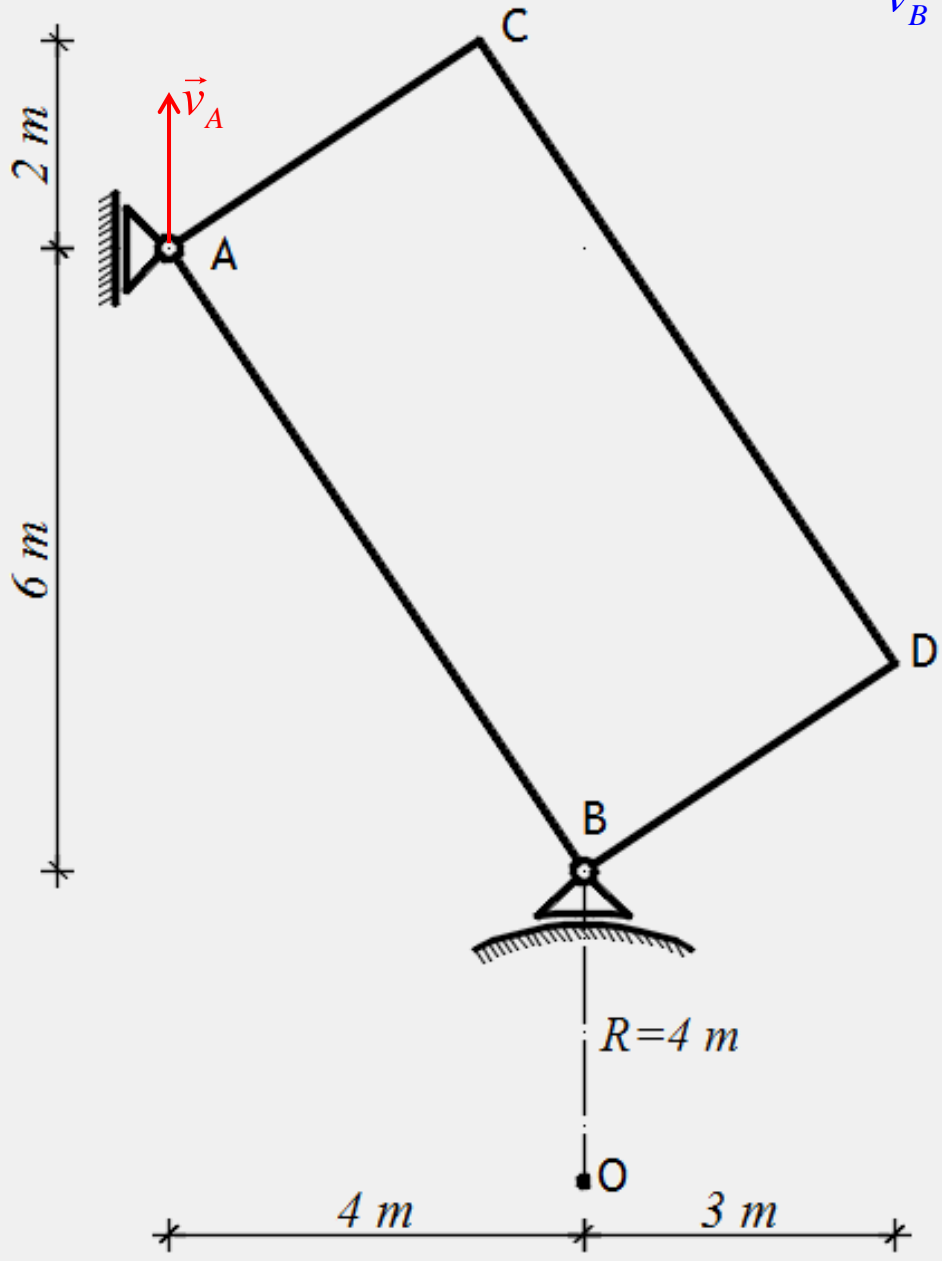
**Brzina točke B**



# BRZINE

# Brzina točky B

$$\vec{v}_B = \vec{v}_A + \vec{v}_{B/A}$$

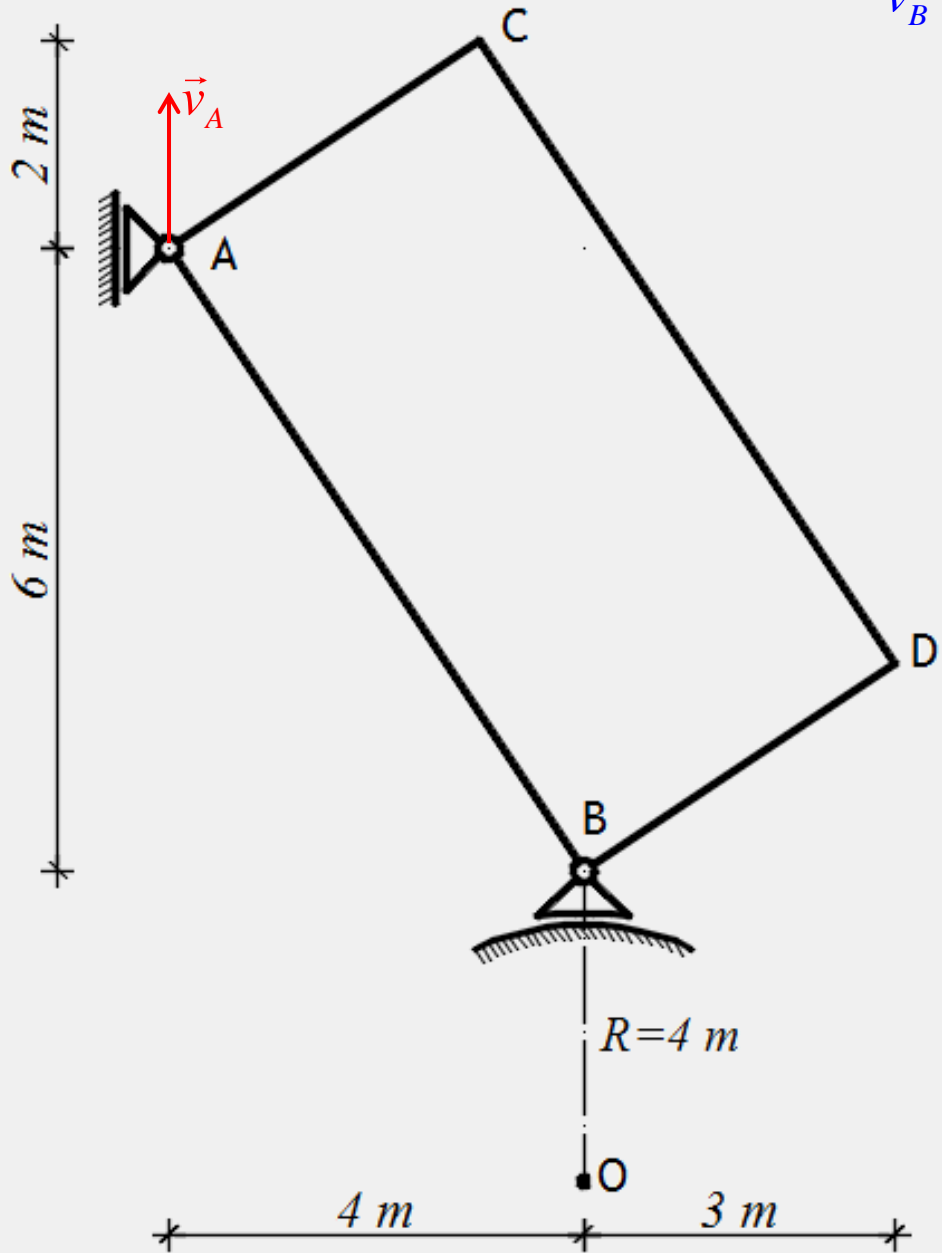


# BRZINE

## Brzina točke B

$$\vec{v}_B = \vec{v}_A + \vec{v}_{B/A}$$

$$\vec{v}_{B/A} \perp \overline{AB}$$

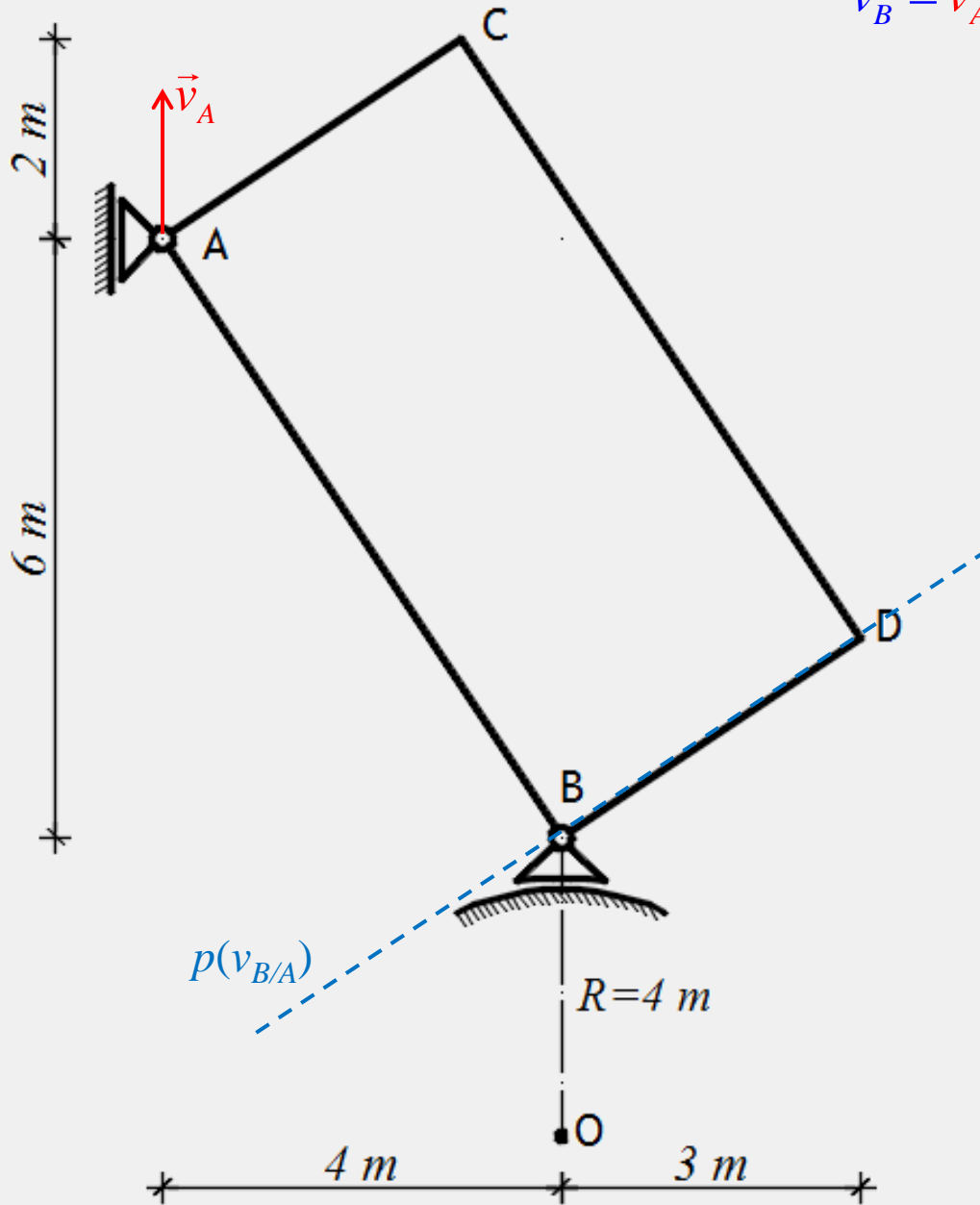


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## Brzina točke B

$$\vec{v}_B = \vec{v}_A + \vec{v}_{B/A}$$

$$\vec{v}_{B/A} \perp \overline{AB}$$



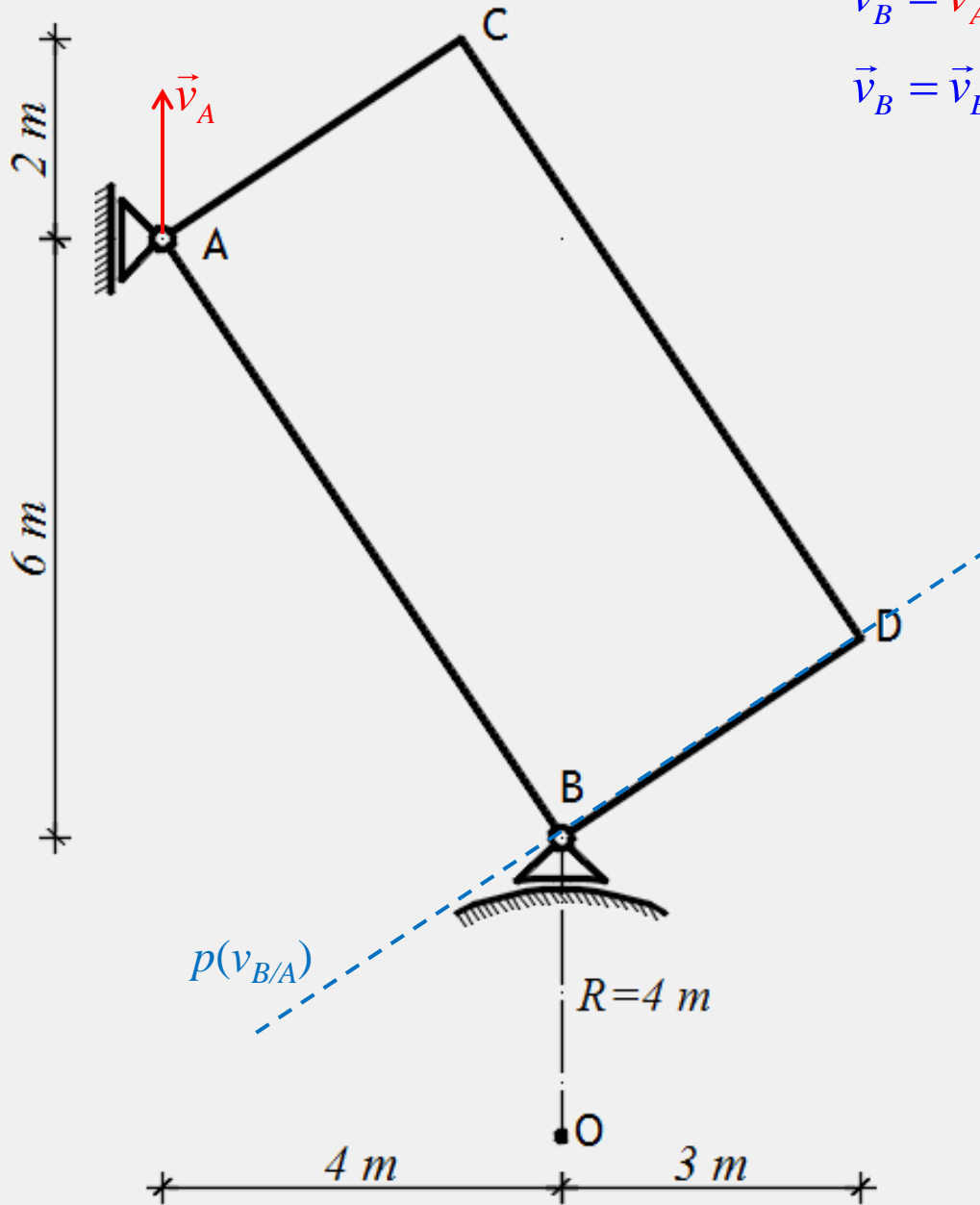
# BRZINE

## Brzina točce B

$$\vec{v}_B = \vec{v}_A + \vec{v}_{B/A}$$

$$\vec{v}_{B/A} \perp \overline{AB}$$

$$\vec{v}_B = \vec{v}_{B/O}$$





# BRZINE

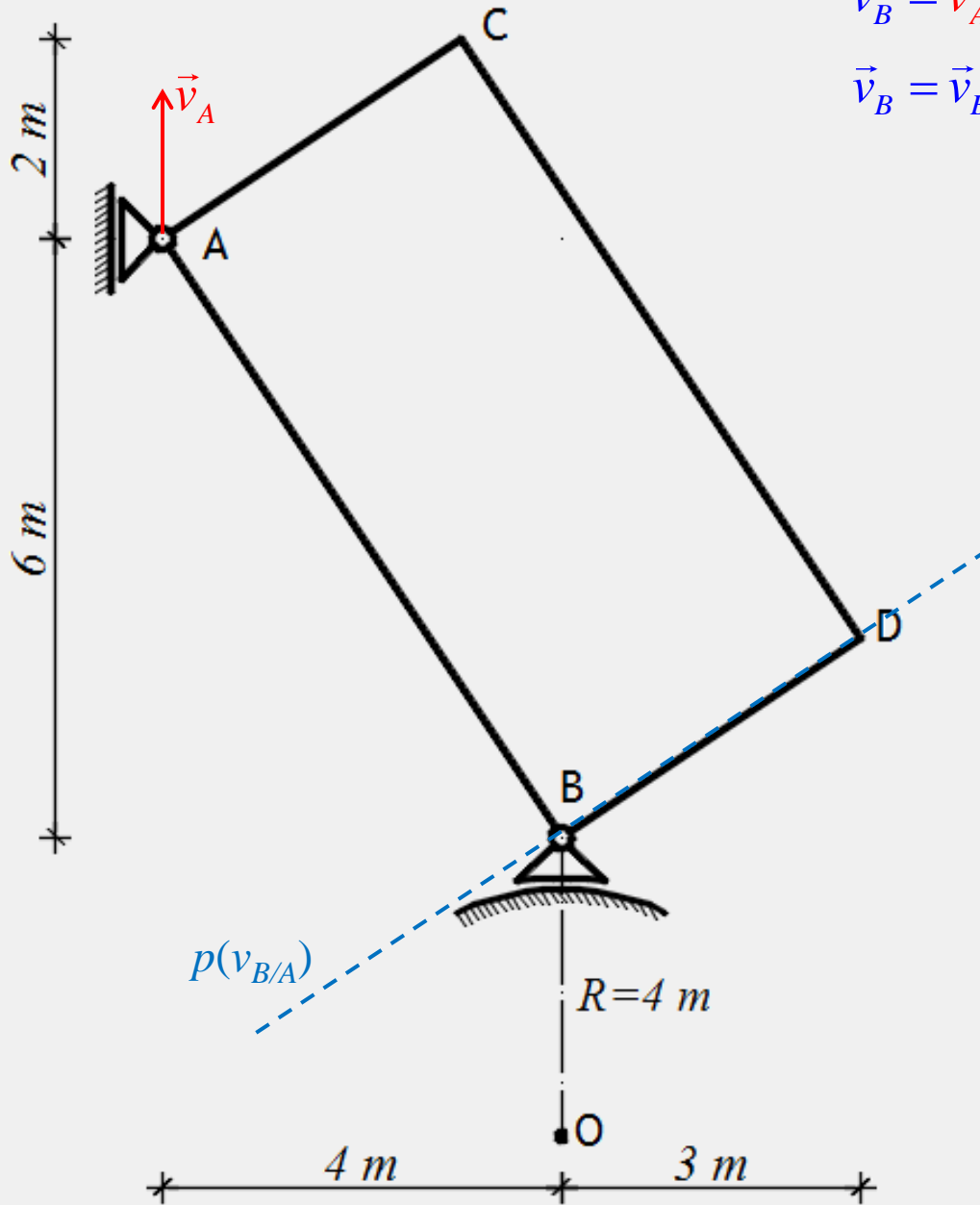
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$$\vec{v}_B = \vec{v}_{B/O}$$

$$\vec{v}_{B/O} \perp \overline{BO}$$



# BRZINE

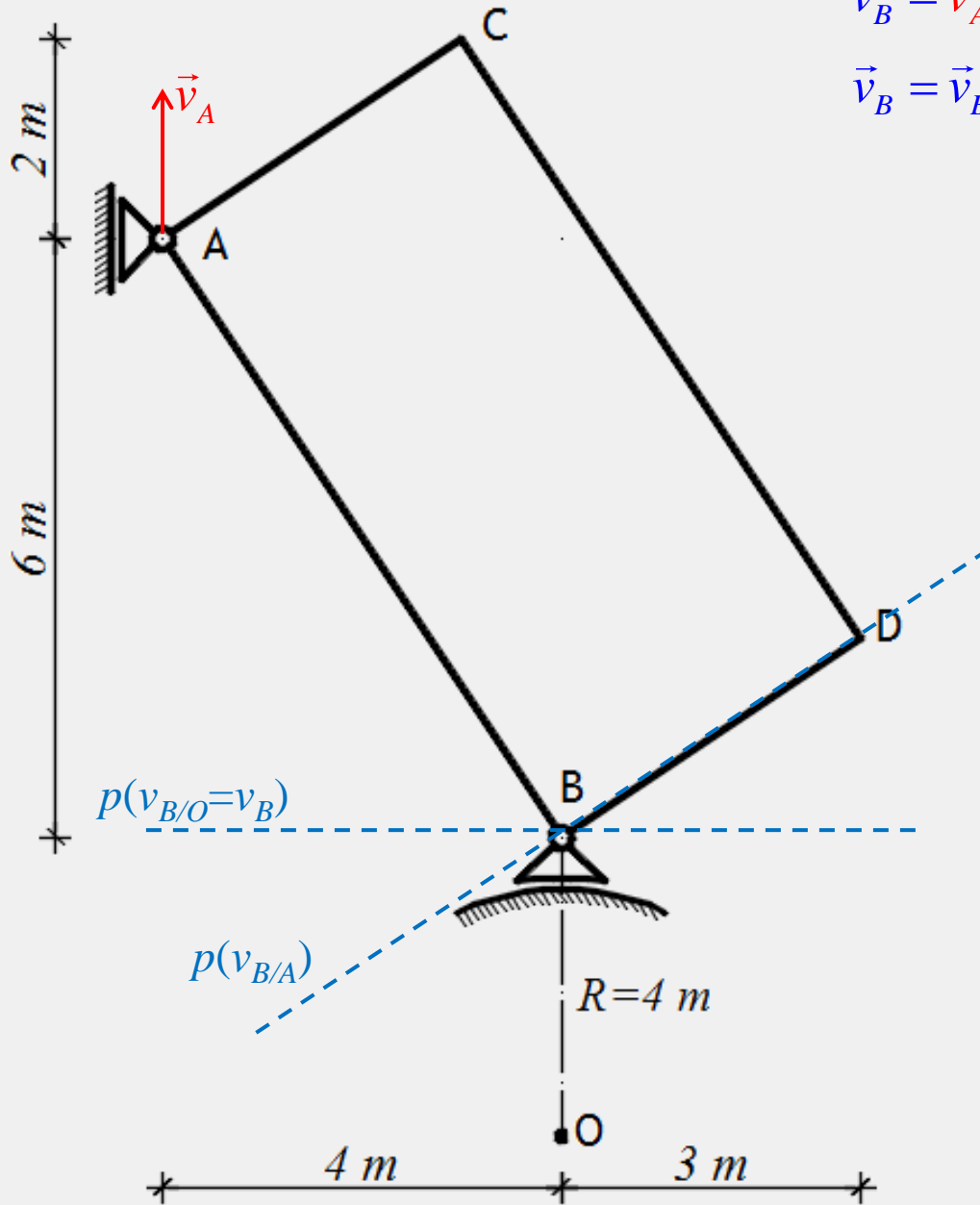
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$$\vec{v}_{B/A} \perp \overline{AB}$$

$$\vec{v}_B = \vec{v}_{B/O}$$

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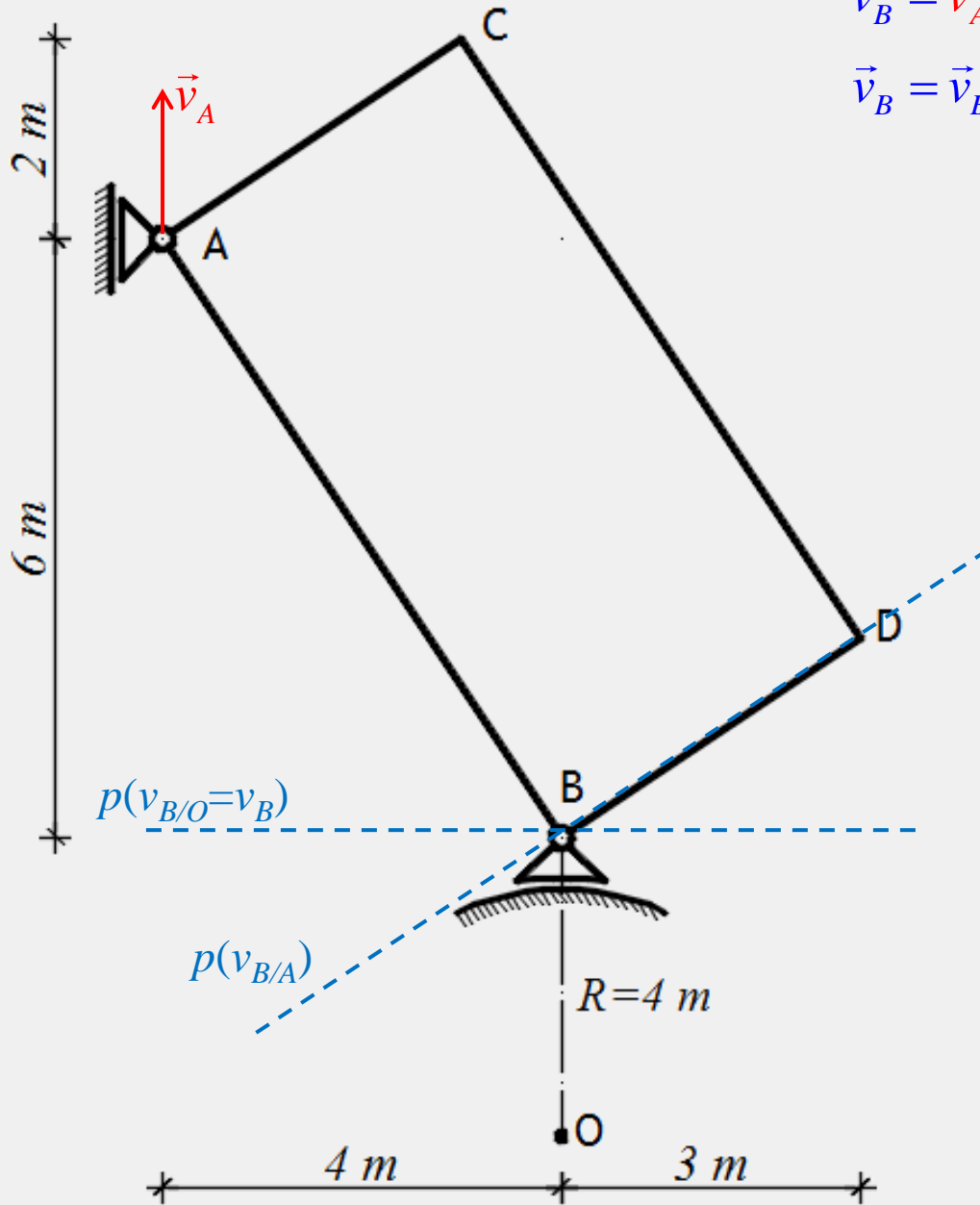
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$$\vec{v}_B = \vec{v}_A + \vec{v}_{B/A} \quad \vec{v}_{B/A} \perp \overline{AB}$$

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$$\vec{v}_A + \vec{v}_{B/A} = \vec{v}_B$$



# BRZINE

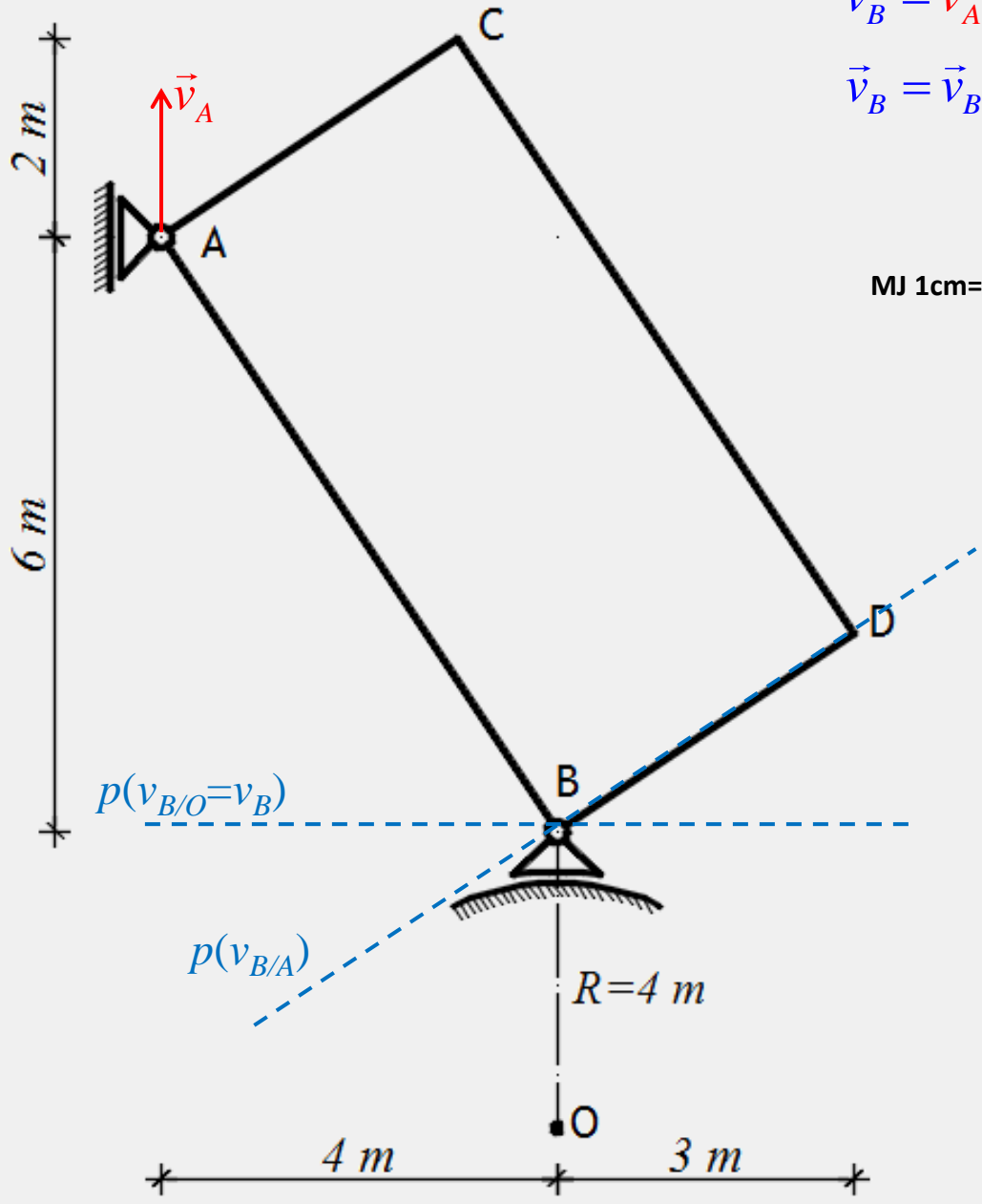
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$$\vec{v}_A + \vec{v}_{B/A} = \vec{v}_B$$

MJ 1cm=1m/s



# BRZINE

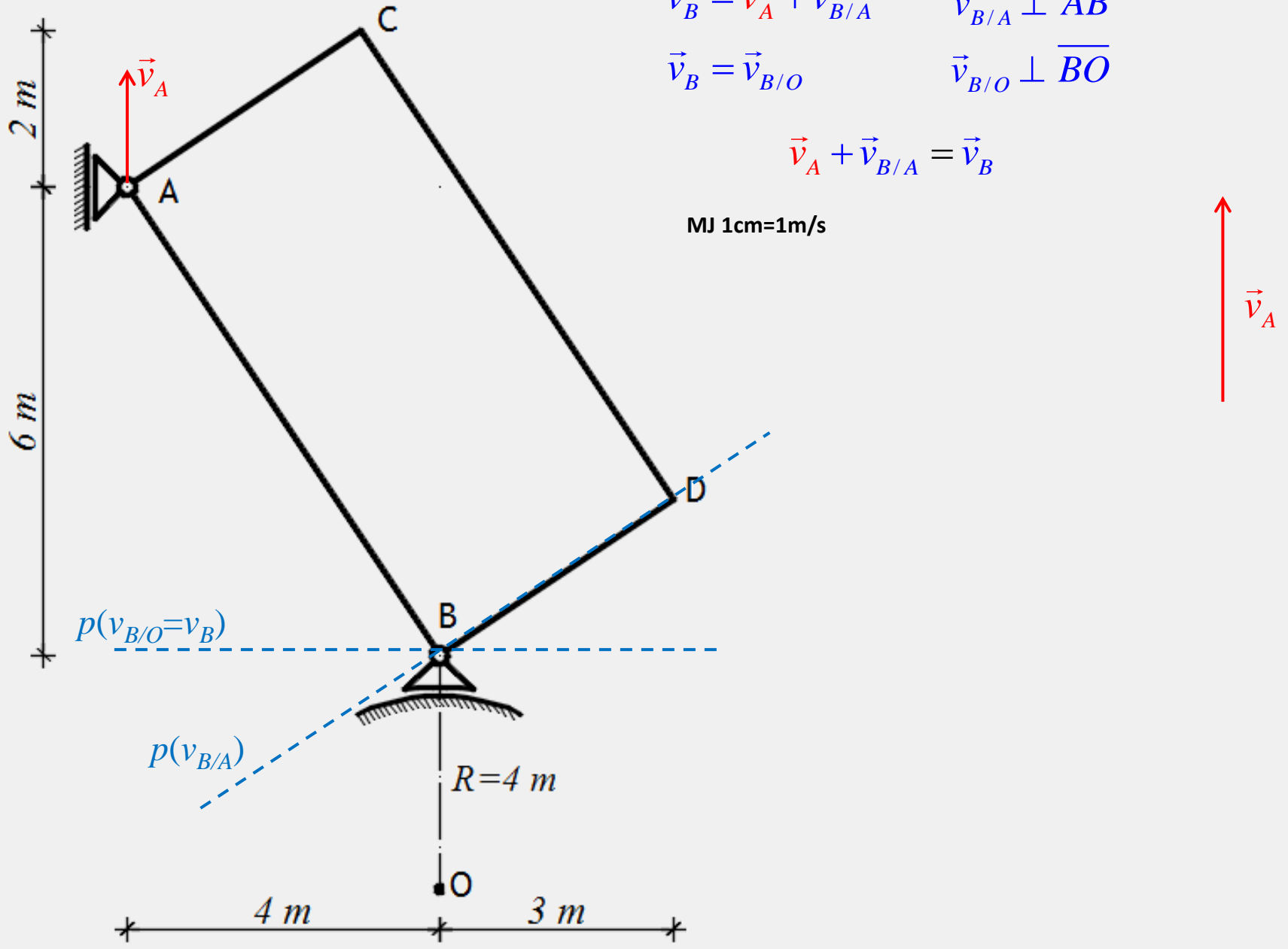
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$$\vec{v}_B = \vec{v}_A + \vec{v}_{B/A} \quad \vec{v}_{B/A} \perp \overline{AB}$$

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# BRZINE

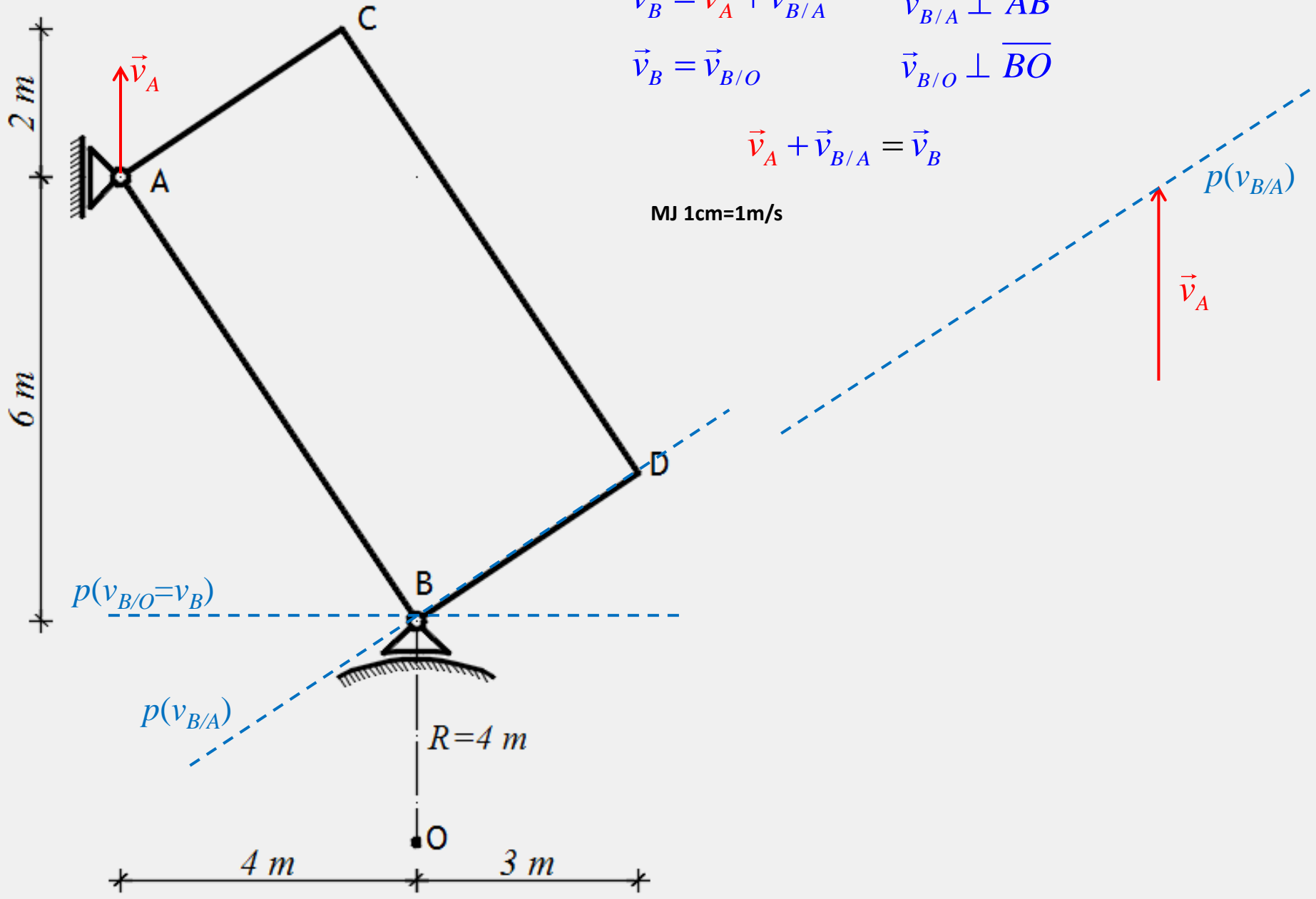
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$$\vec{v}_B = \vec{v}_A + \vec{v}_{B/A} \quad \vec{v}_{B/A} \perp \overline{AB}$$

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# BRZINE

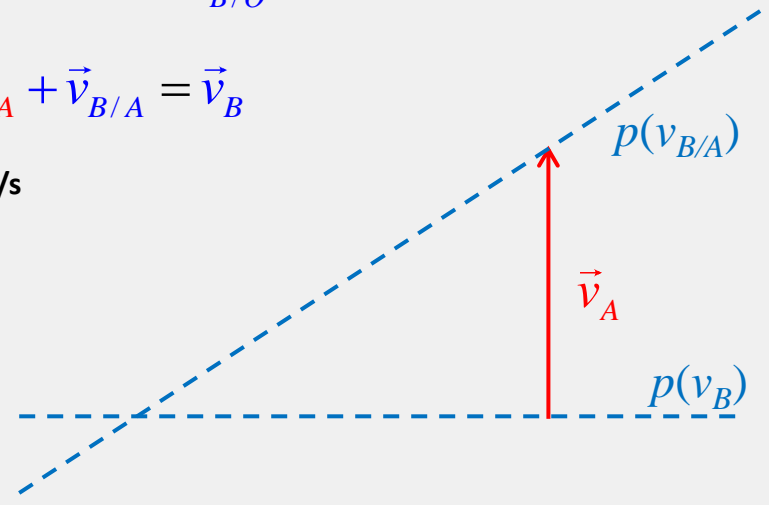
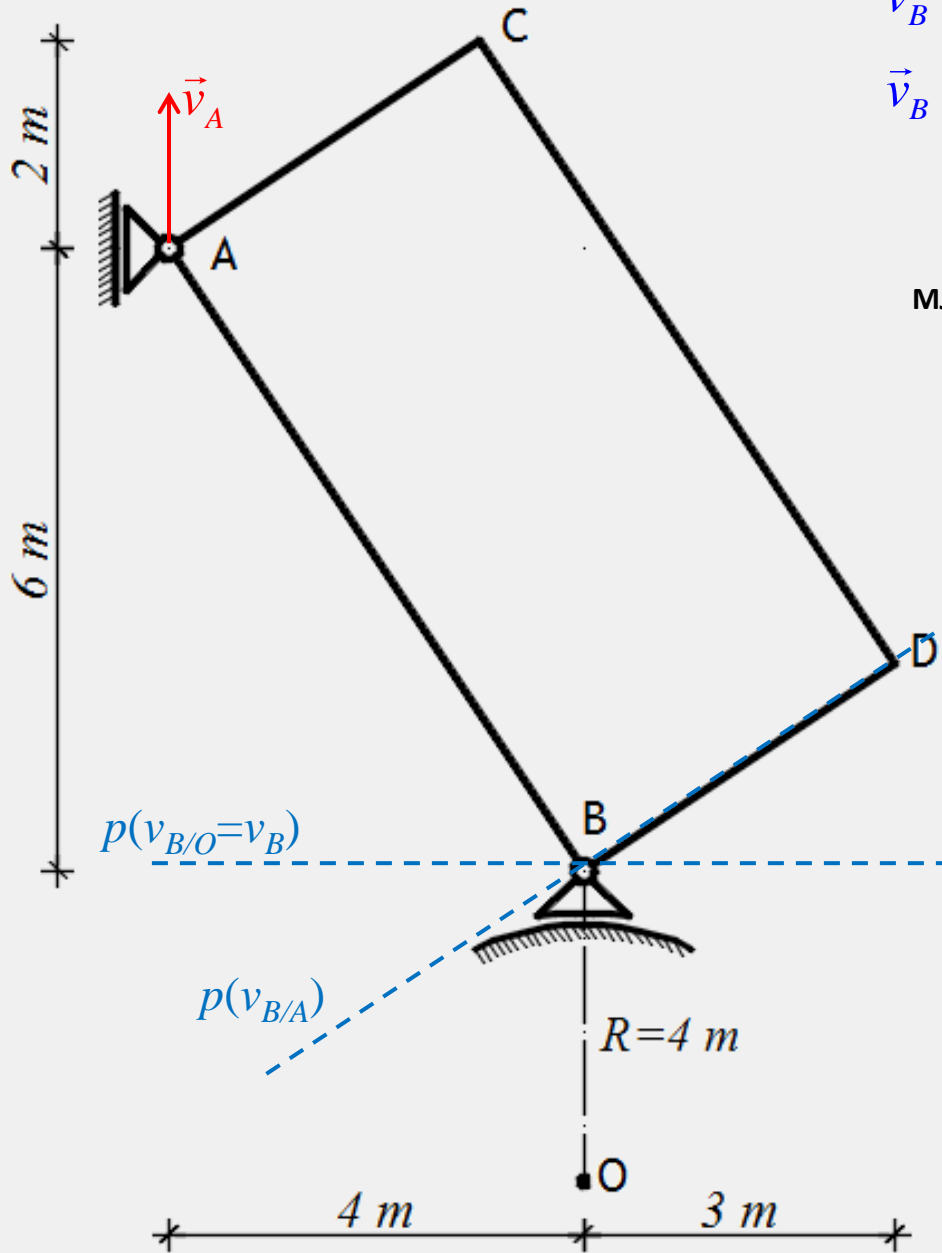
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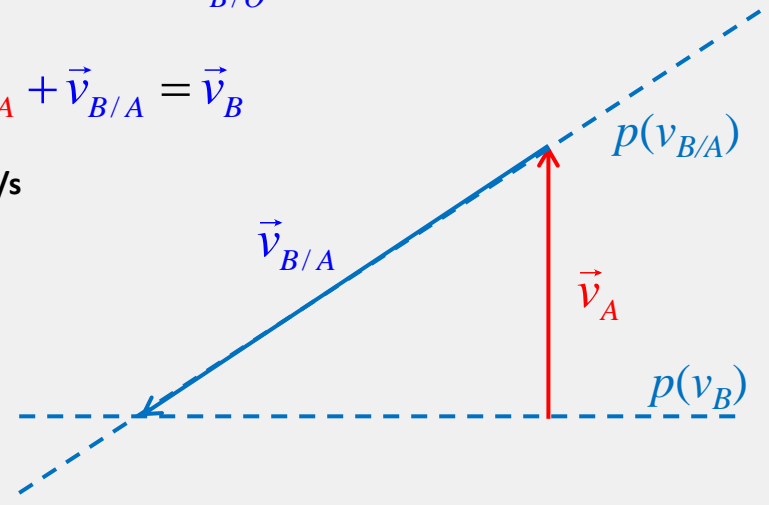
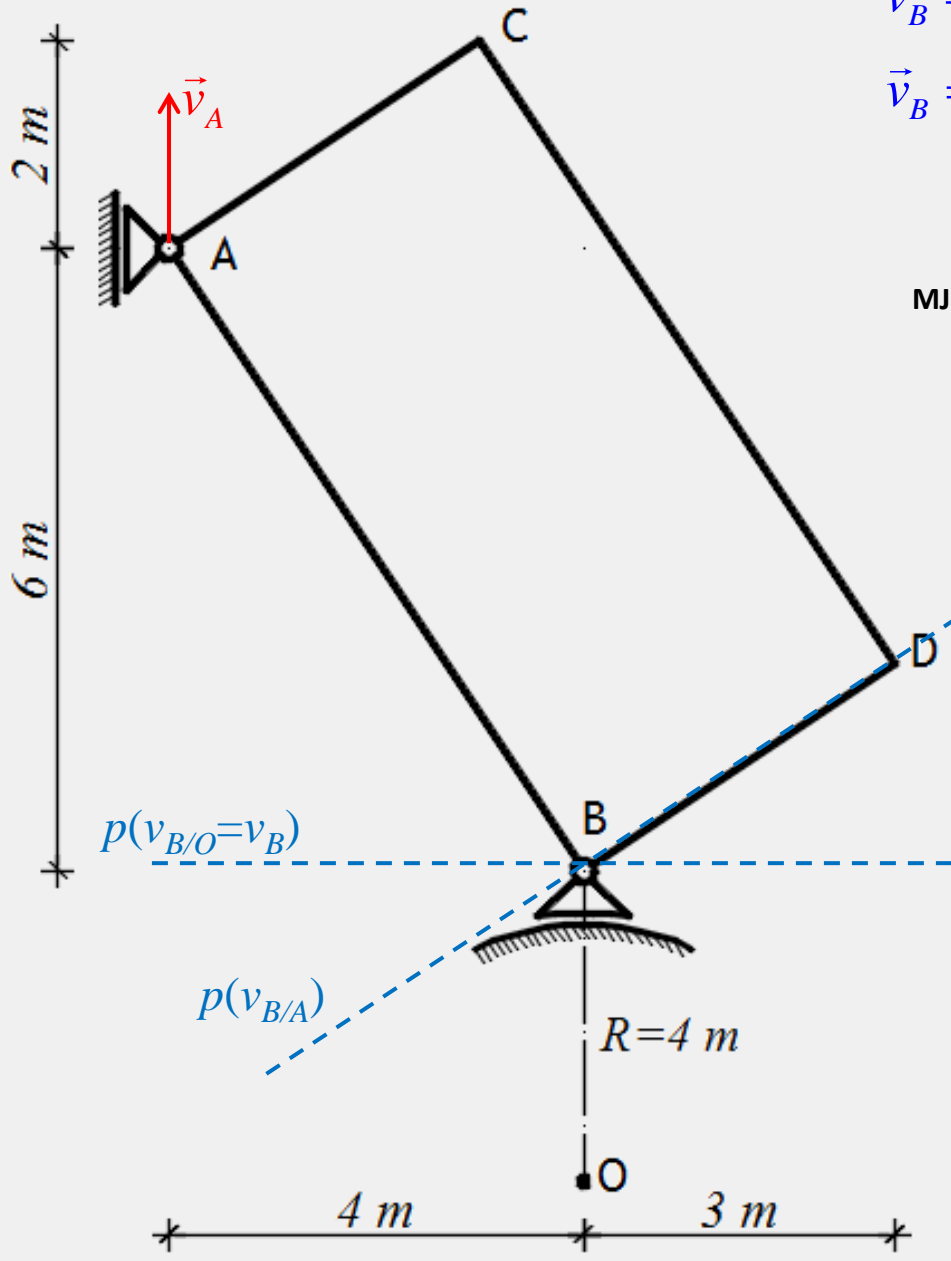
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# BRZINE

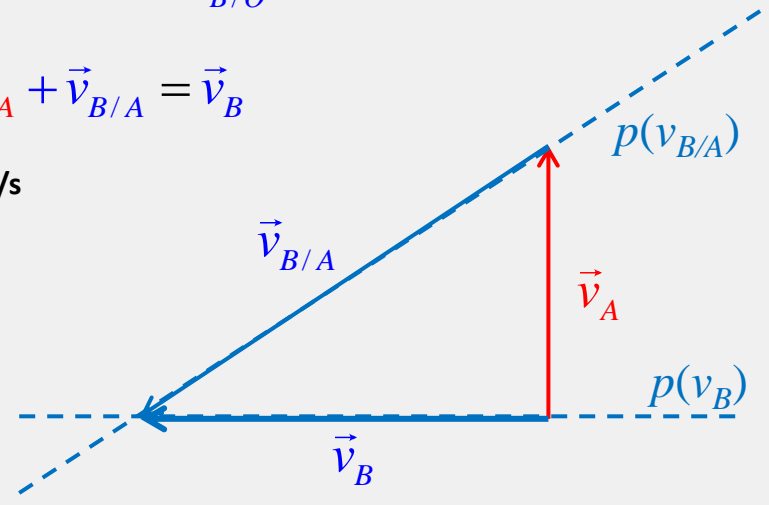
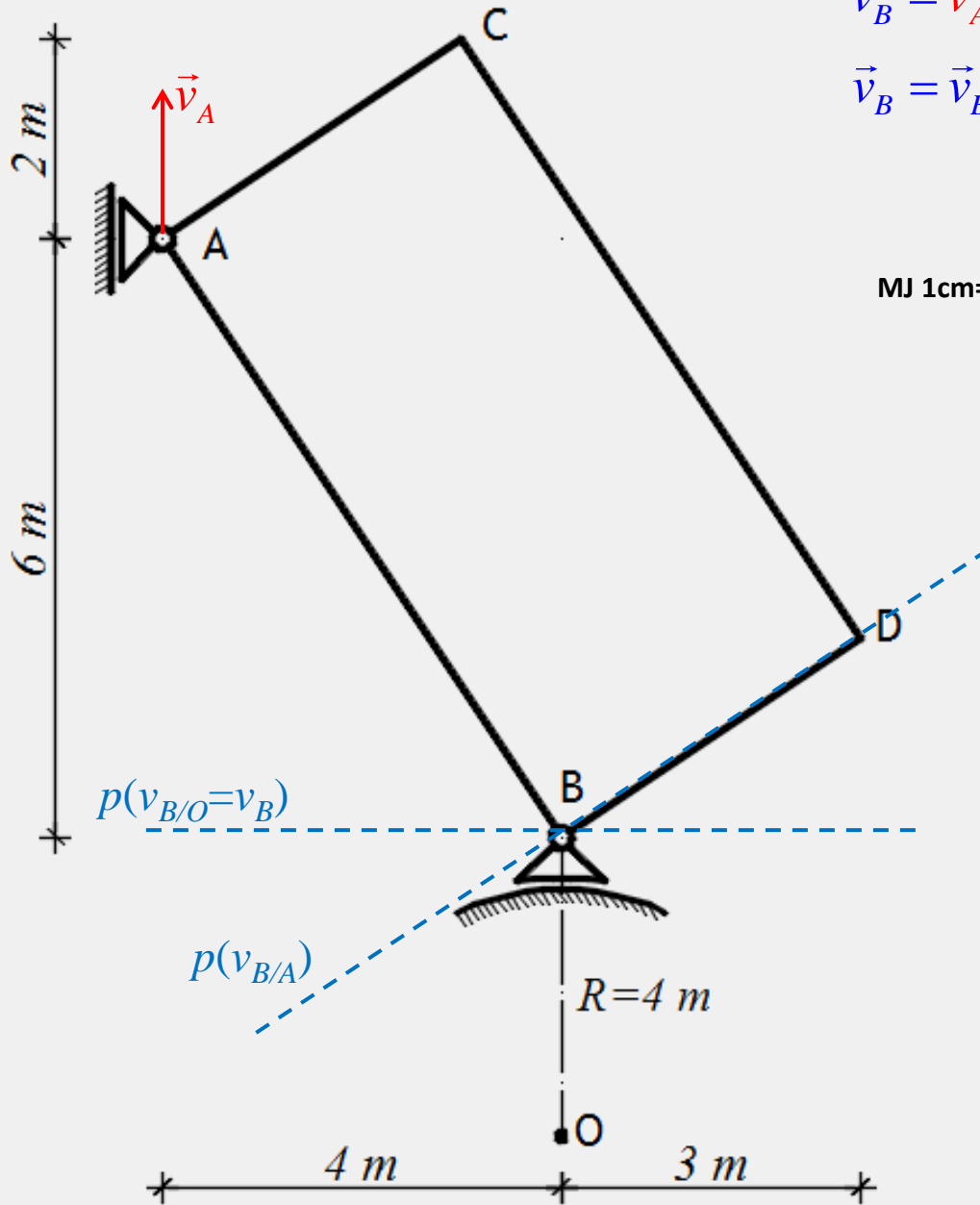
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# BRZINE

## Brzina točky B

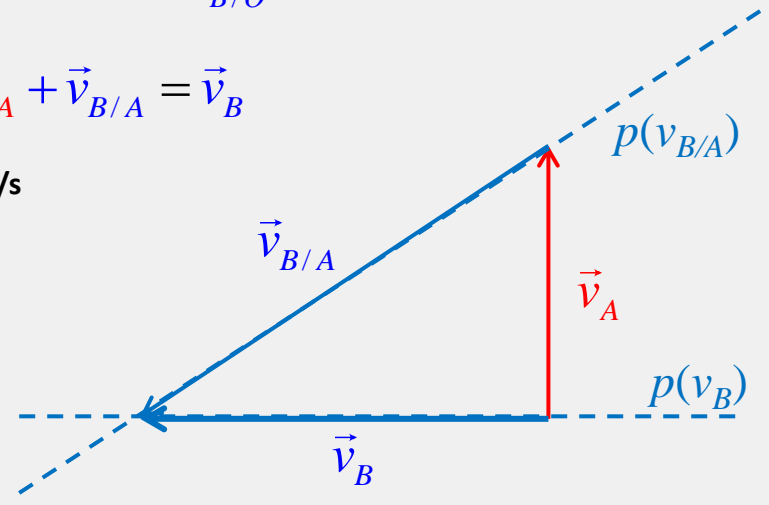
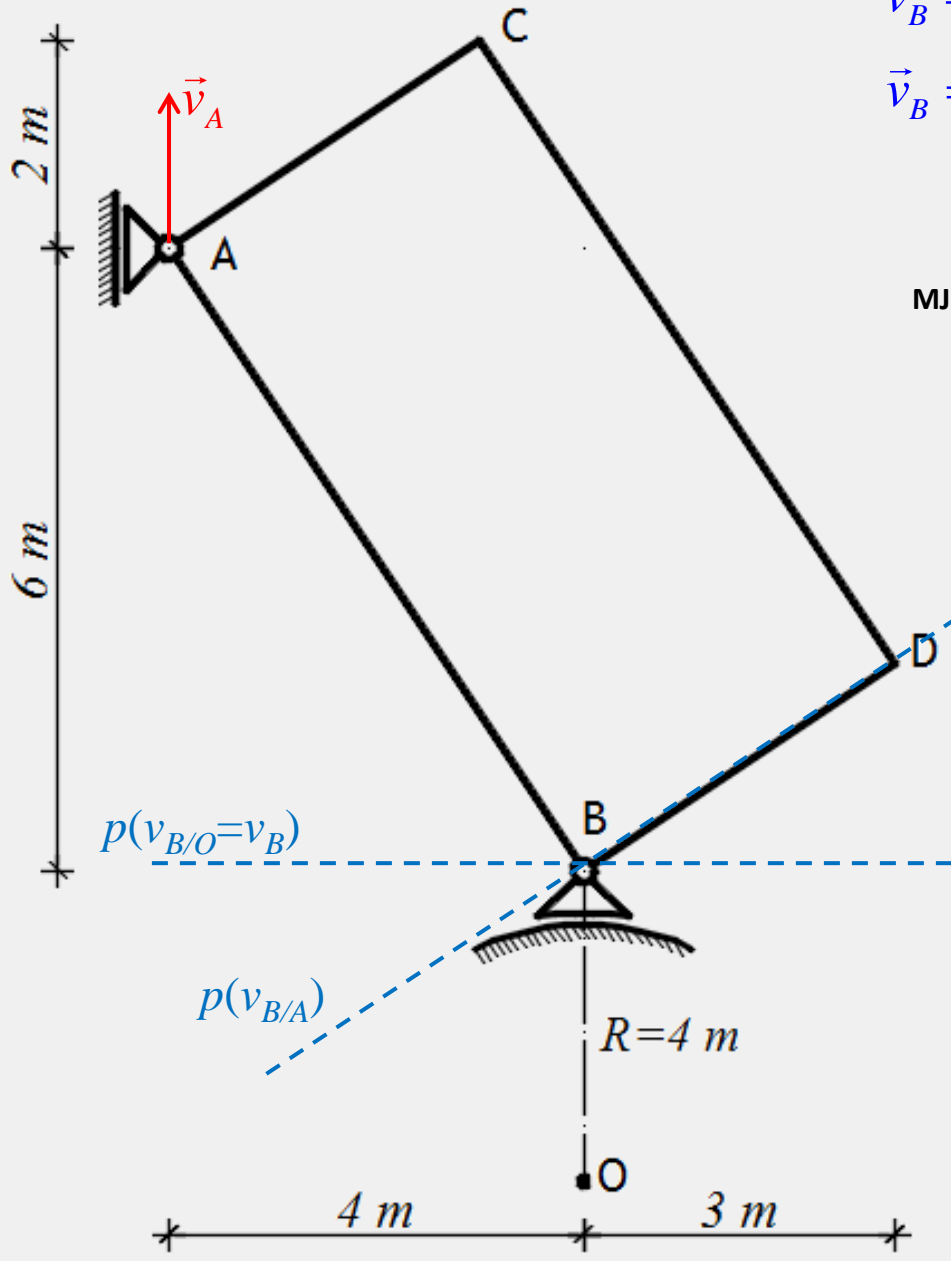
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MJ 1cm=1m/s

očitano:



# BRZINE

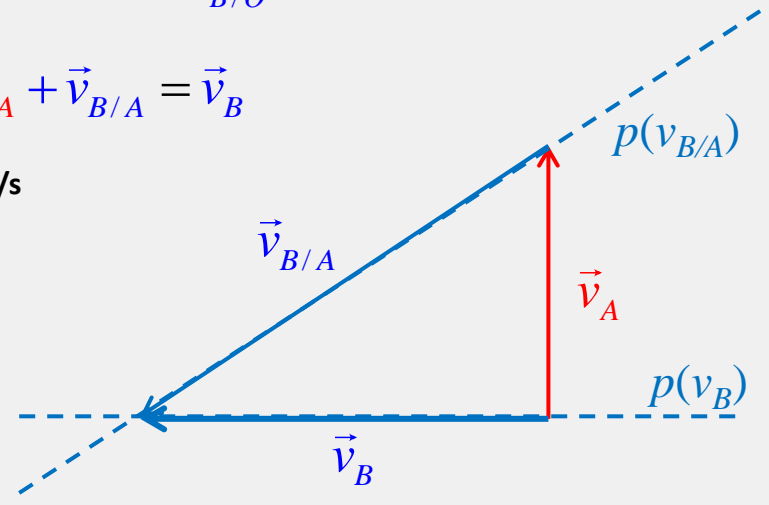
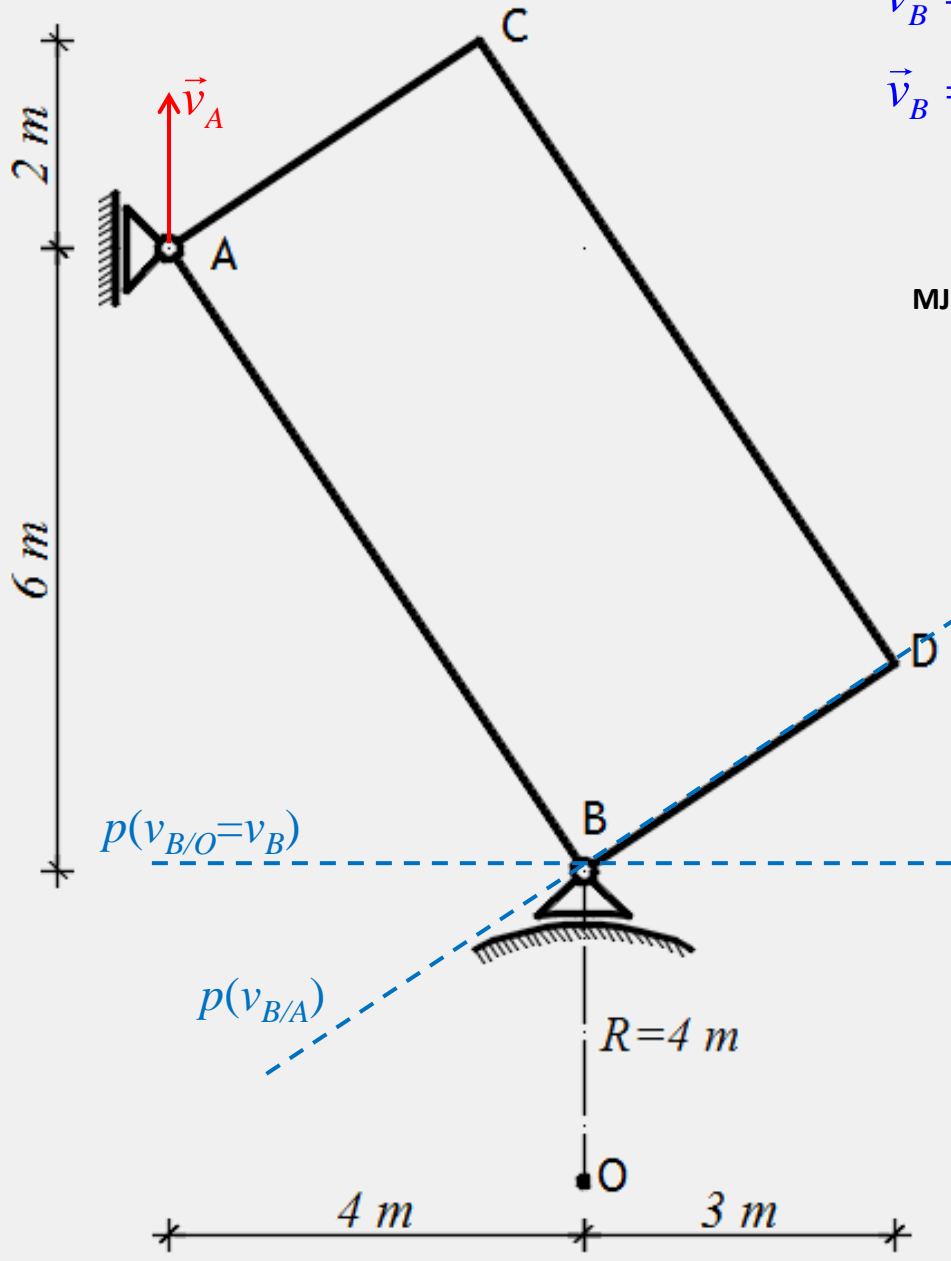
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MJ 1cm=1m/s



očitano:  $v_{B/A} = 7,2 \text{ cm} = 7,2 \text{ m/s}$

# BRZINE

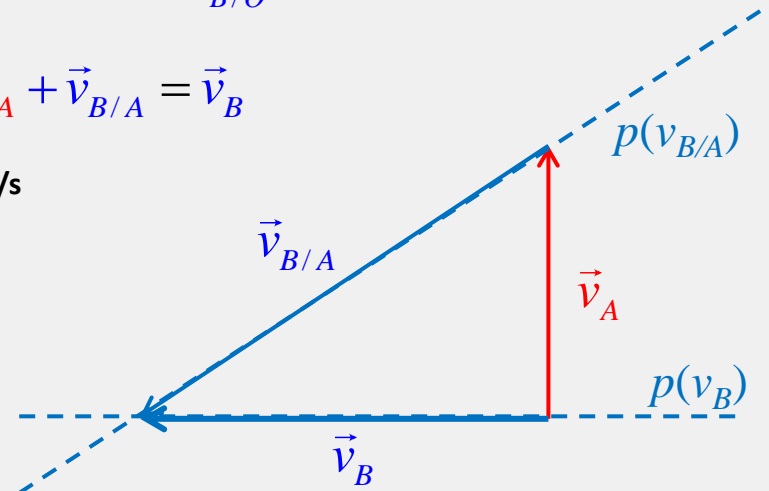
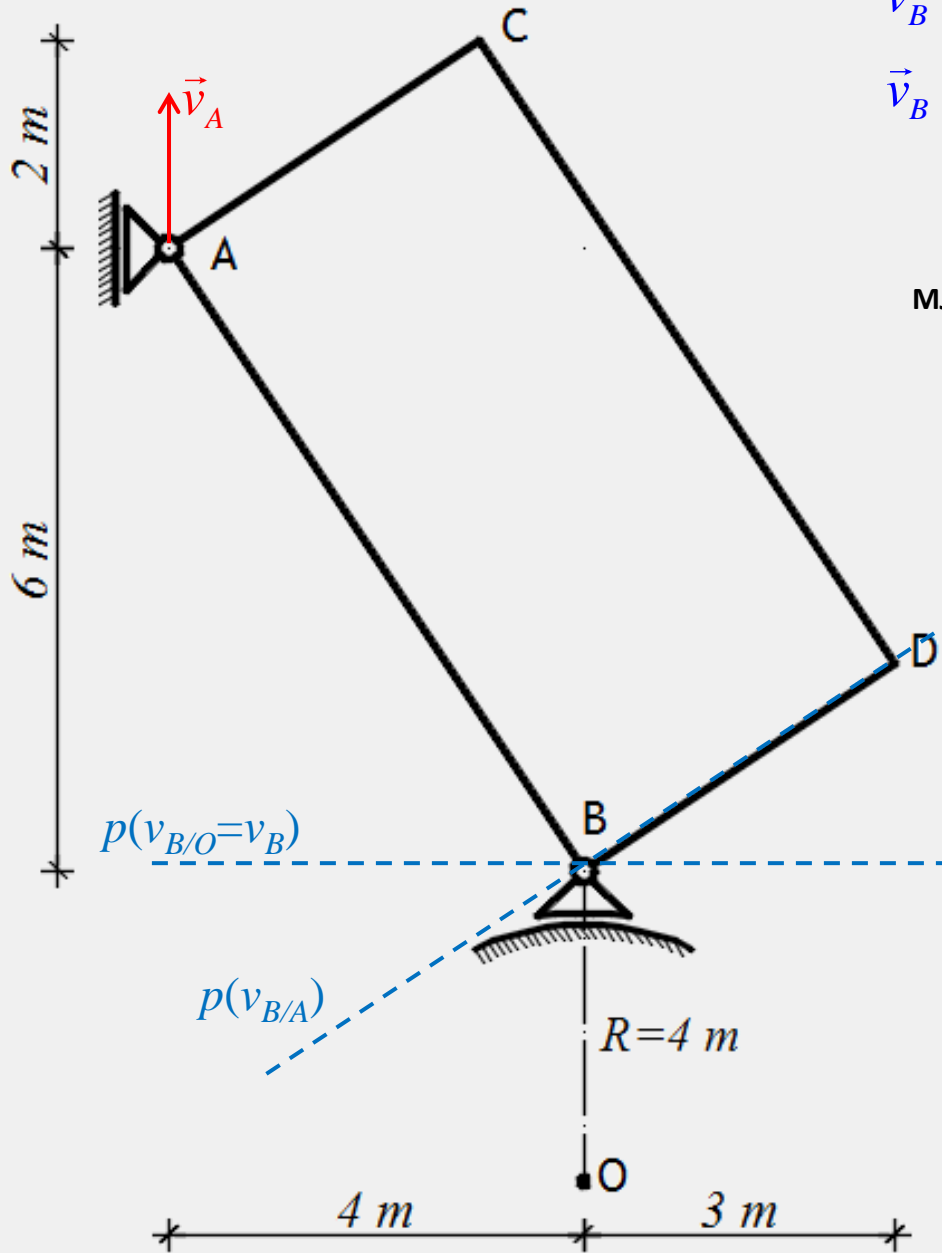
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$$\vec{v}_A + \vec{v}_{B/A} = \vec{v}_B$$

MJ 1cm=1m/s



očitano:  $v_{B/A} = 7,2 \text{ cm} = 7,2 \text{ m/s}$   
 $v_B = 6 \text{ cm} = 6 \text{ m/s}$

# BRZINE

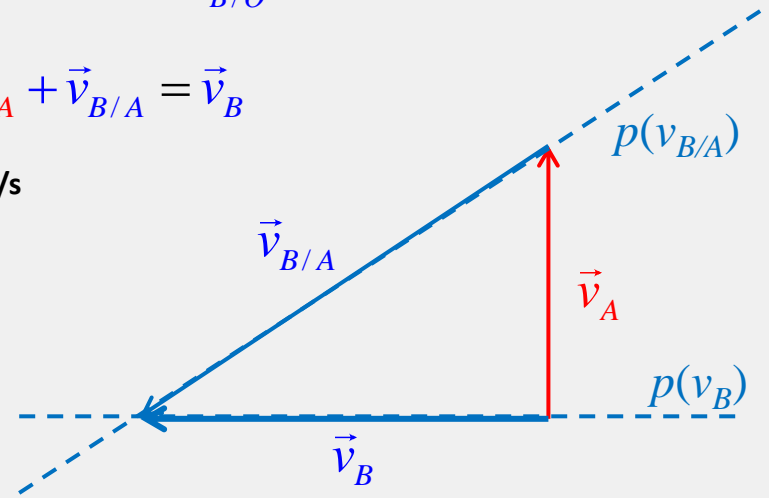
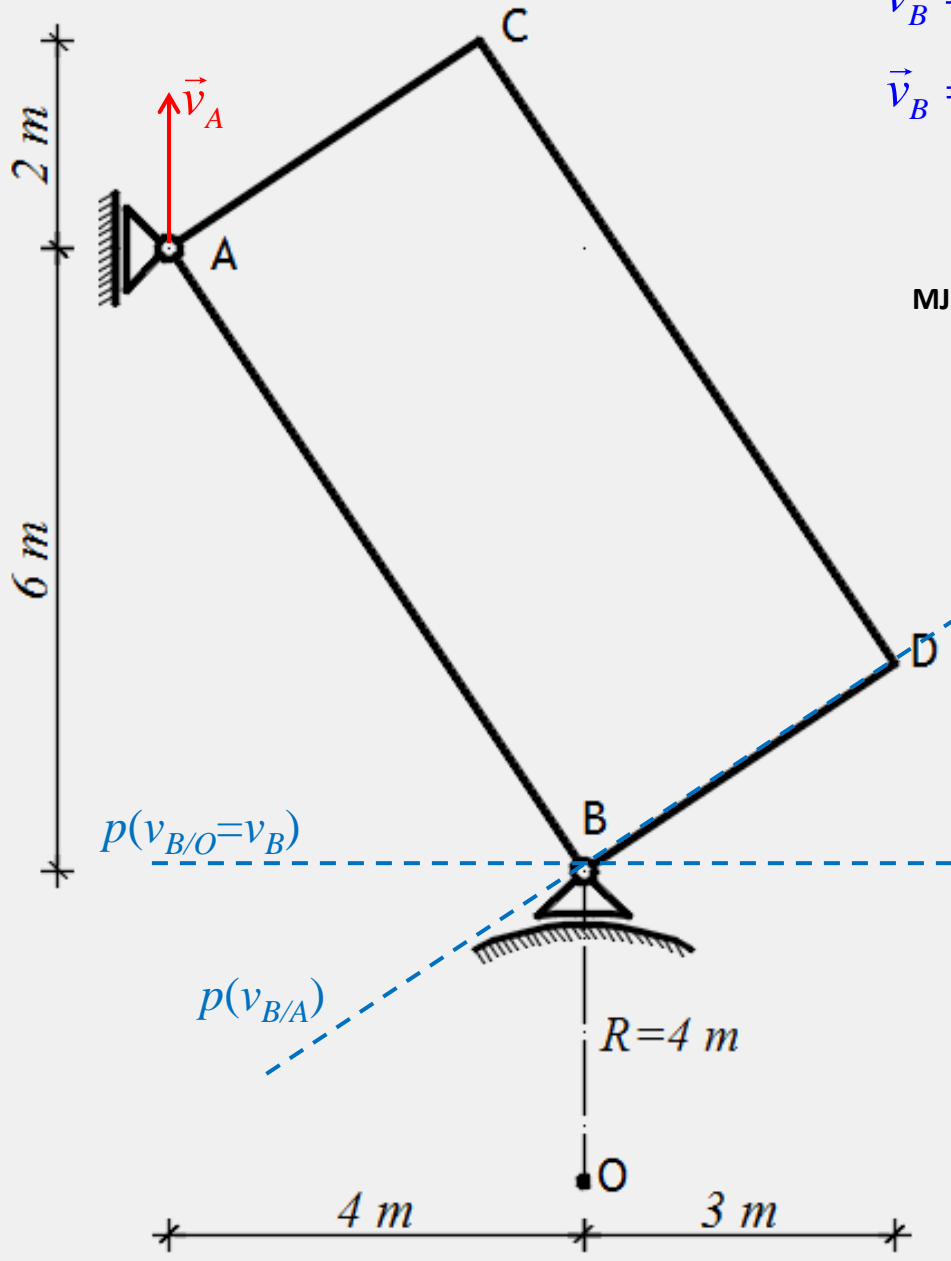
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MJ 1cm=1m/s



očitano:  $v_{B/A} = 7,2 \text{ cm} = 7,2 \text{ m/s}$   
 $v_B = 6 \text{ cm} = 6 \text{ m/s}$   
 $\vec{v}_B = -6\vec{i}$

# BRZINE

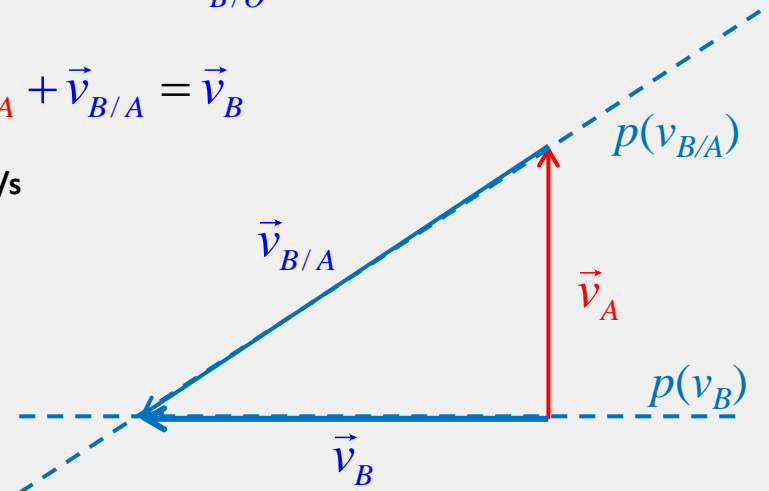
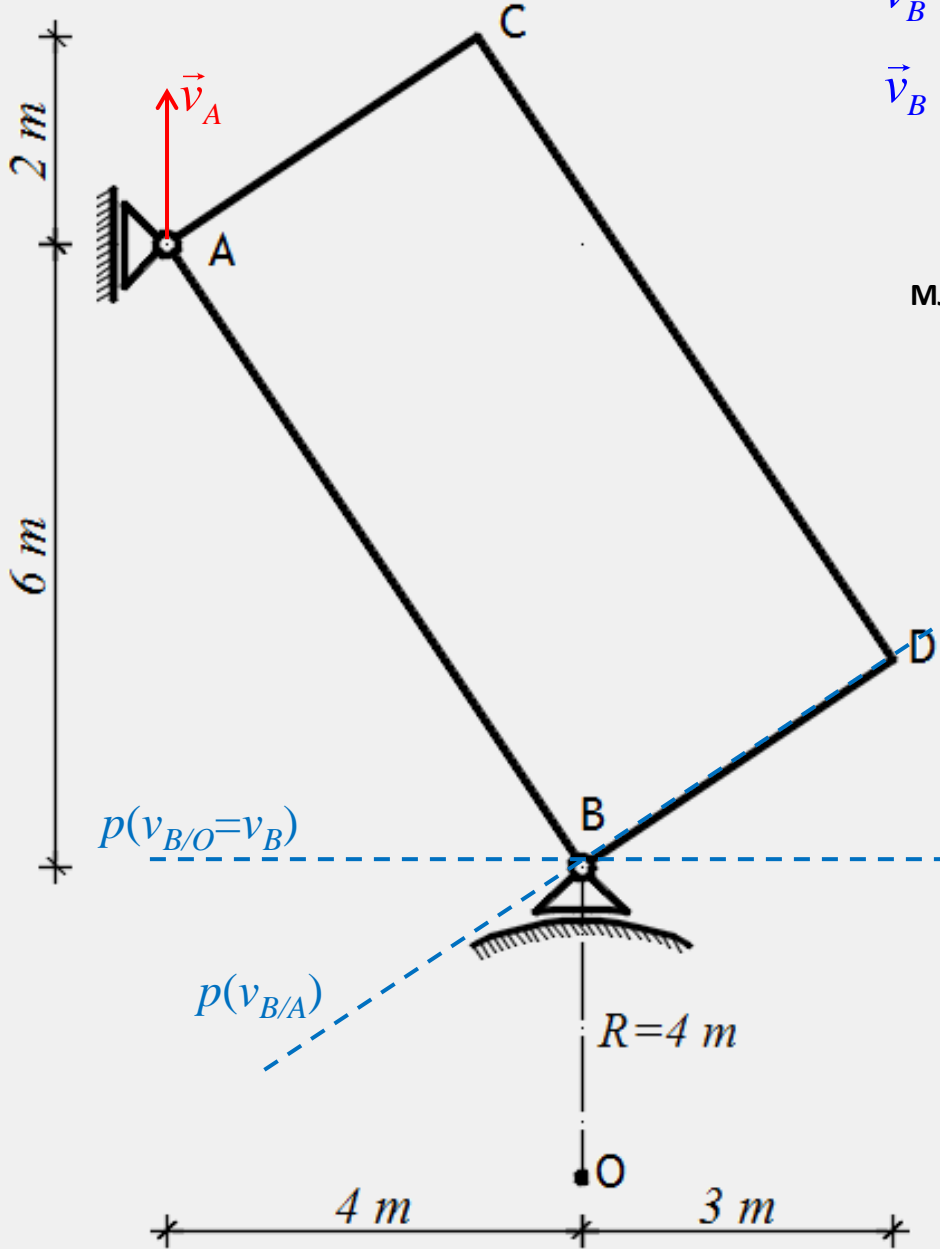
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MJ 1cm=1m/s



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$$\omega = \frac{v_{B/A}}{AB} = \frac{7,2}{7,2} = 1 \text{ r/s}$$

# BRZINE

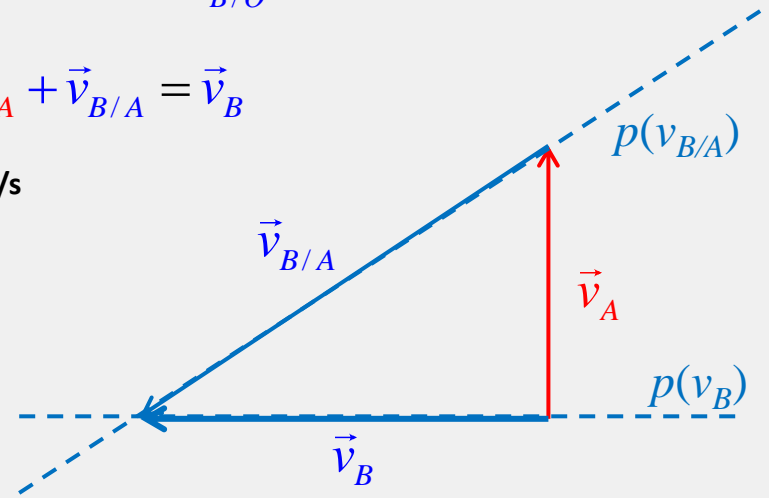
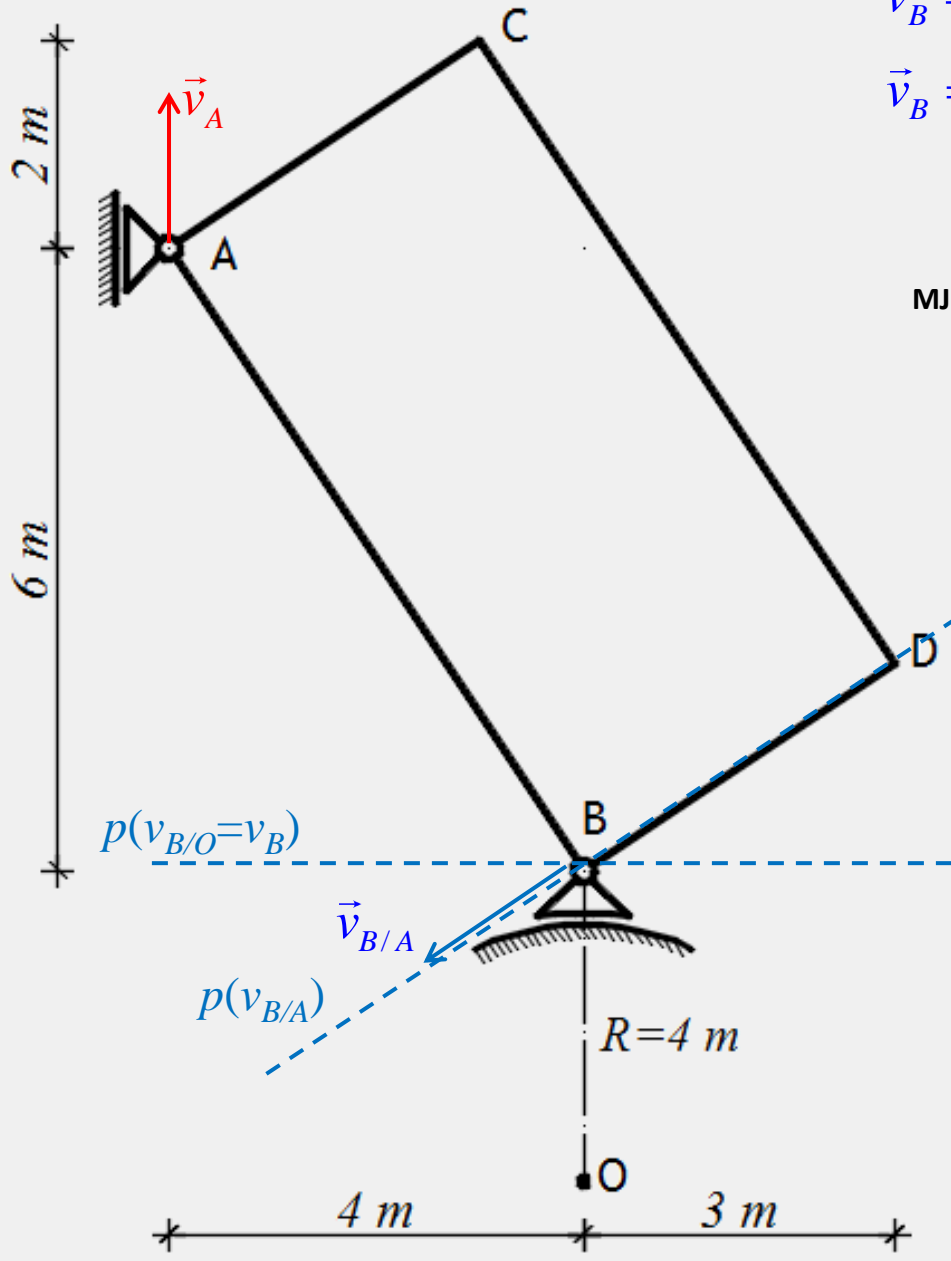
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MJ 1cm=1m/s



očitano:  $v_{B/A} = 7,2 \text{ cm} = 7,2 \text{ m/s}$   
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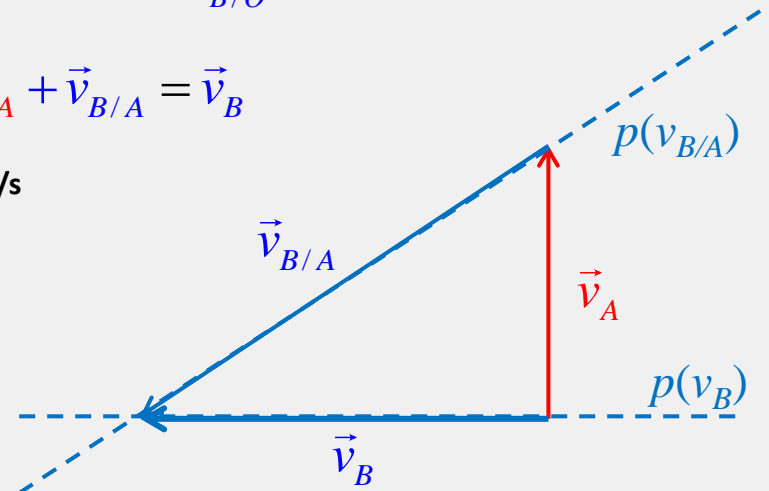
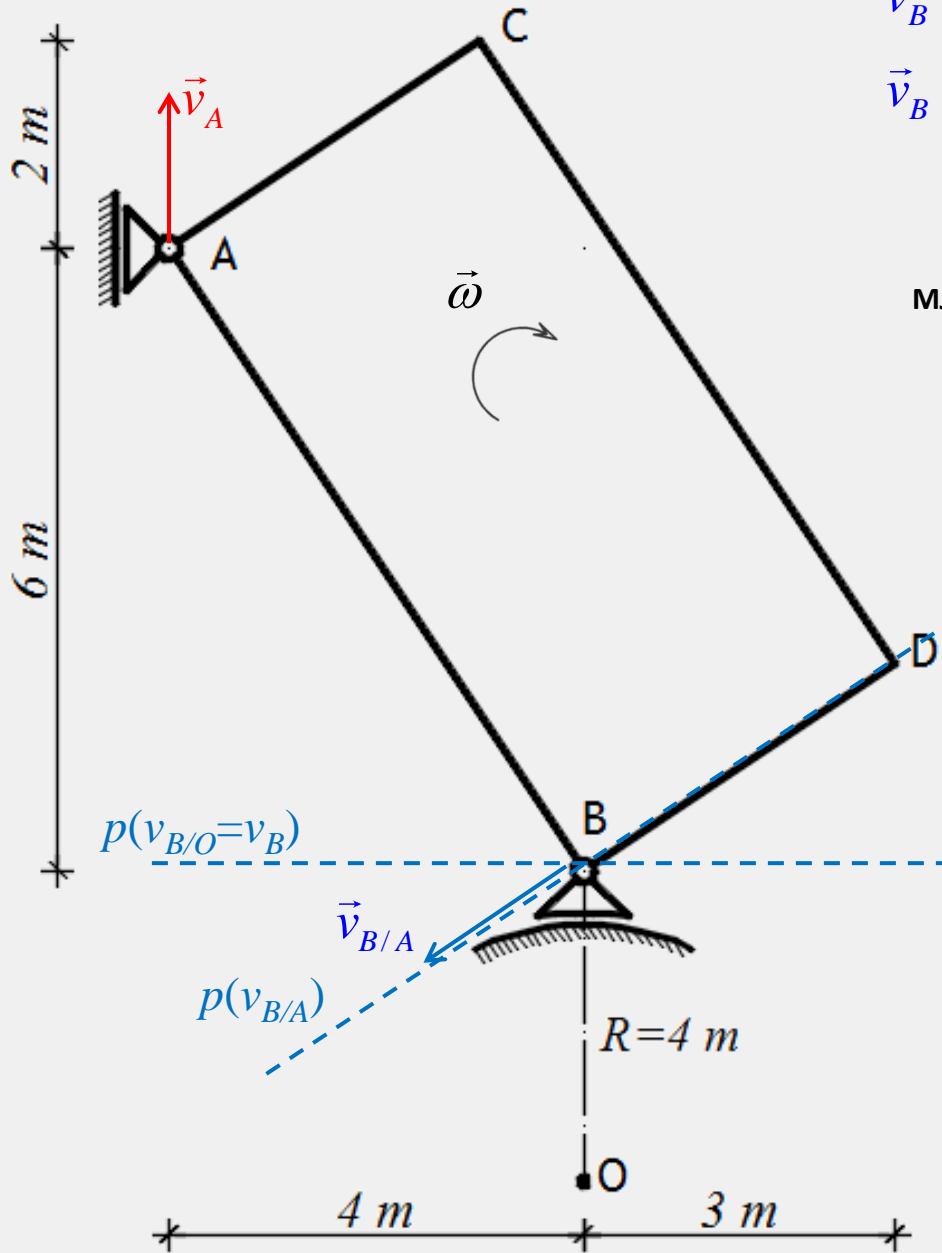
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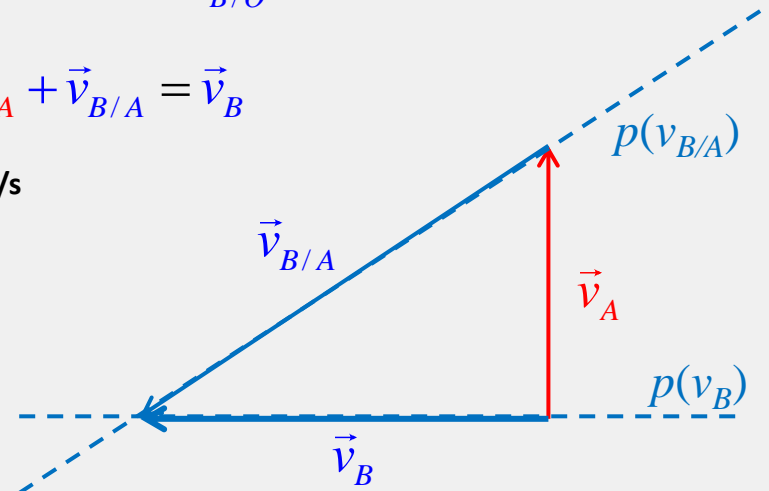
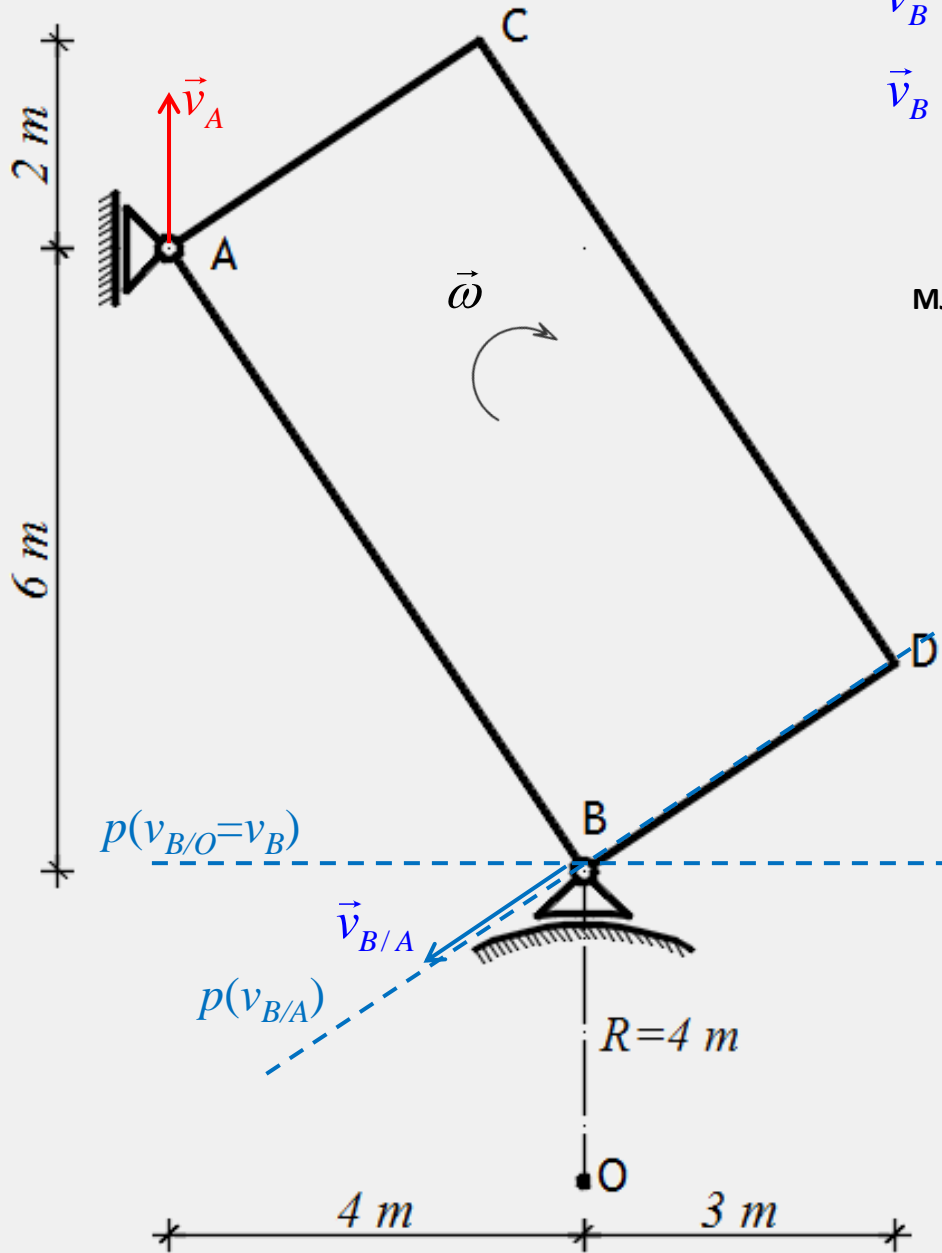
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MJ 1cm=1m/s



očitano:  $v_{B/A} = 7,2 \text{ cm} = 7,2 \text{ m/s}$   
 $v_B = 6 \text{ cm} = 6 \text{ m/s}$   
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$$\omega = \frac{v_{B/A}}{AB} = \frac{7,2}{7,2} = 1 \text{ r/s} \quad \vec{\omega} = -\vec{k}$$

# BRZINE

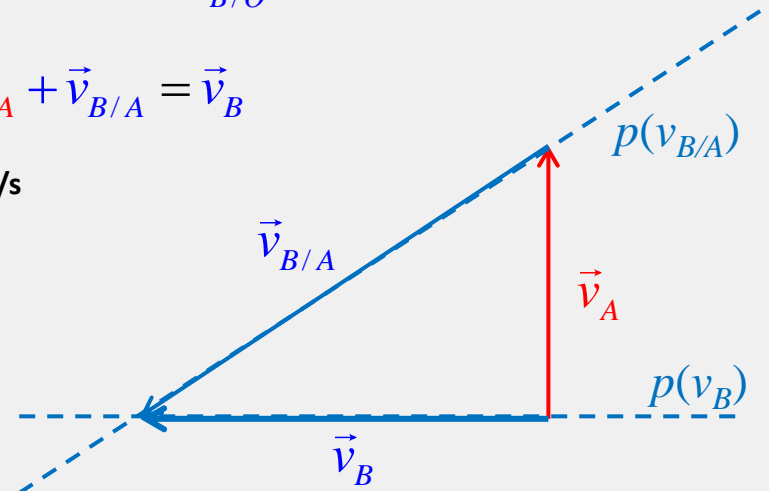
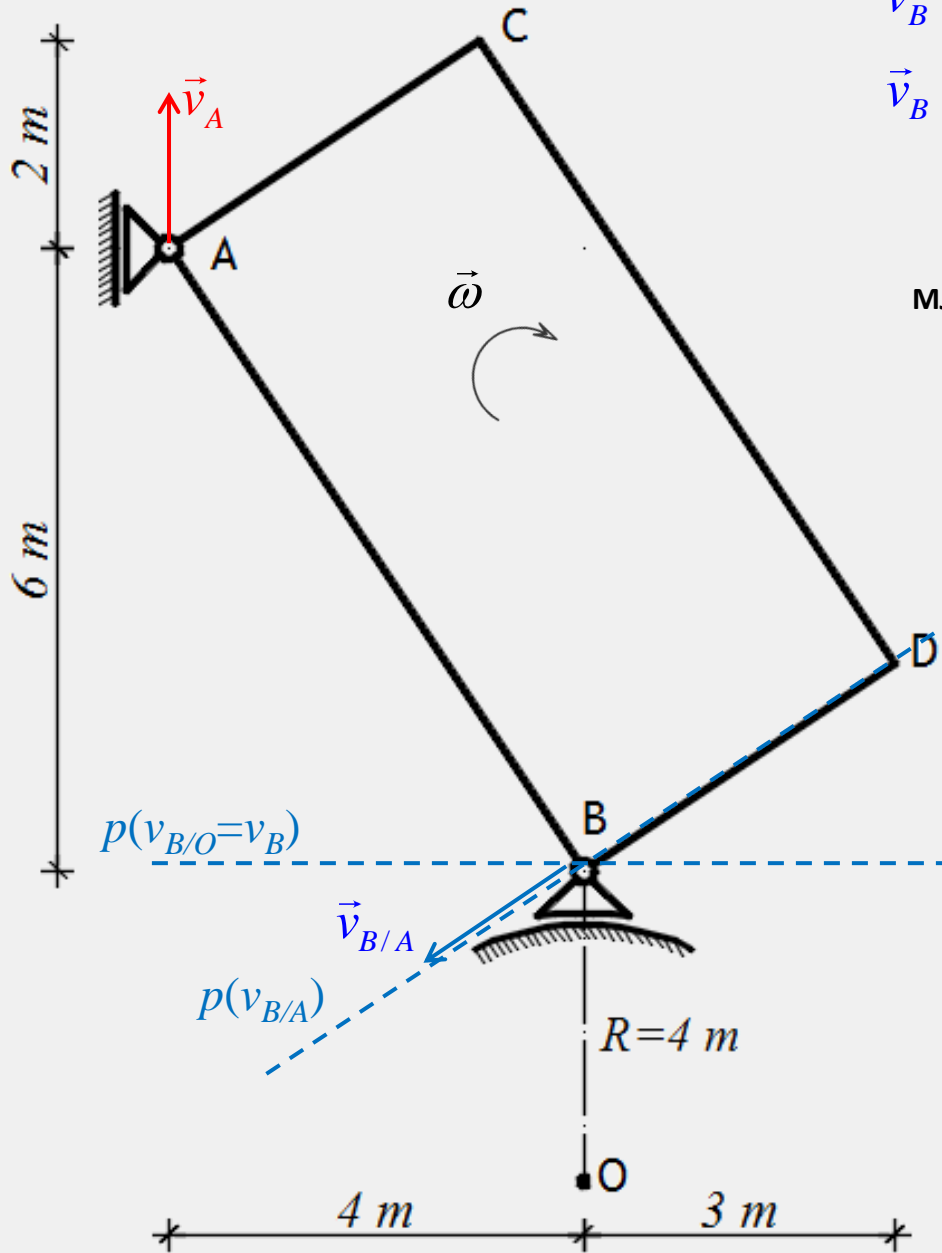
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MJ 1cm=1m/s



očitano:  $v_{B/A} = 7,2 \text{ cm} = 7,2 \text{ m/s}$   
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$$\omega = \frac{v_{B/A}}{AB} = \frac{7,2}{7,2} = 1 \text{ r/s} \quad \vec{\omega} = -\vec{k}$$

$$\omega_O = \frac{v_B}{R} = \frac{6}{4} = 1,5 \text{ r/s}$$

# BRZINE

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MJ 1cm=1m/s

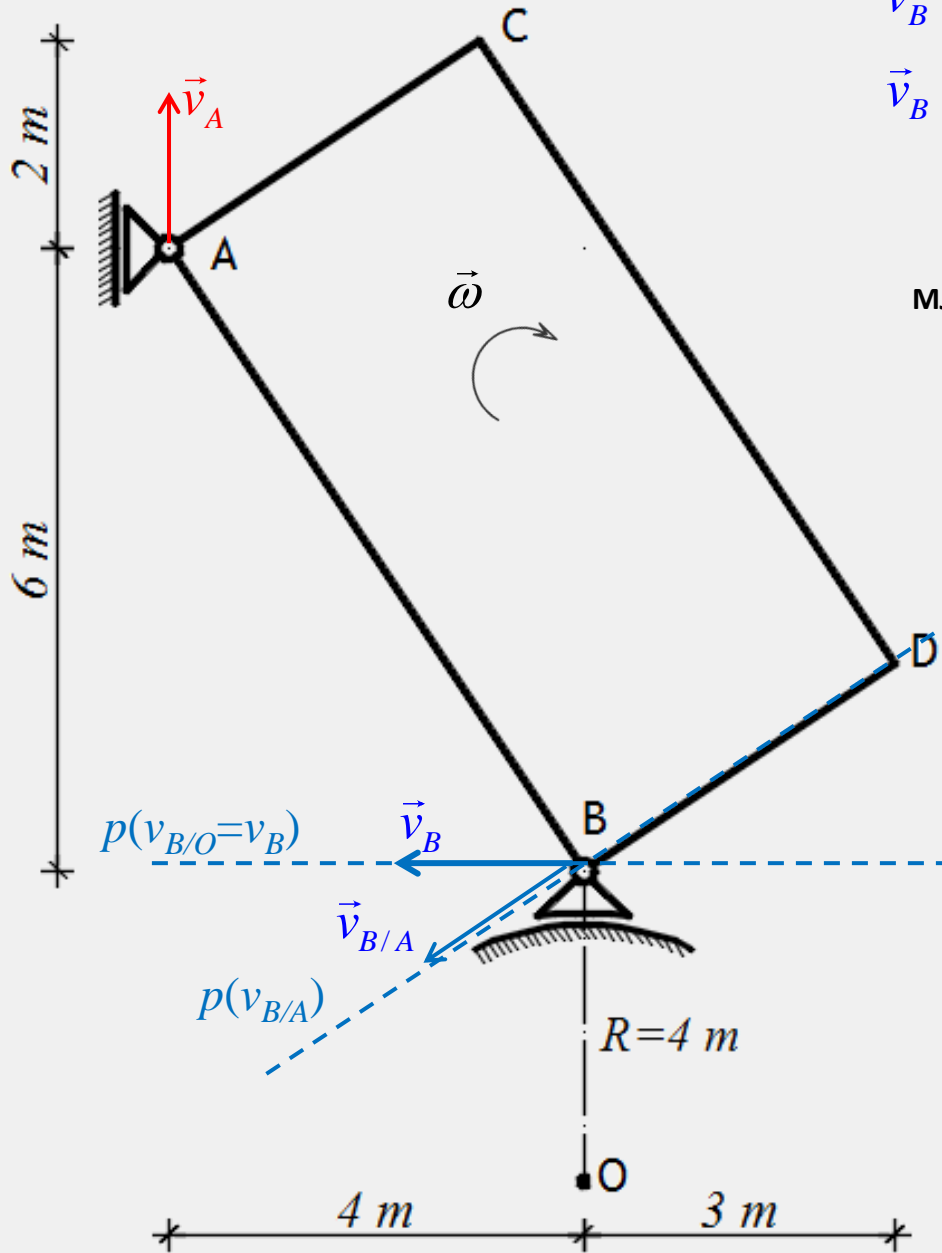
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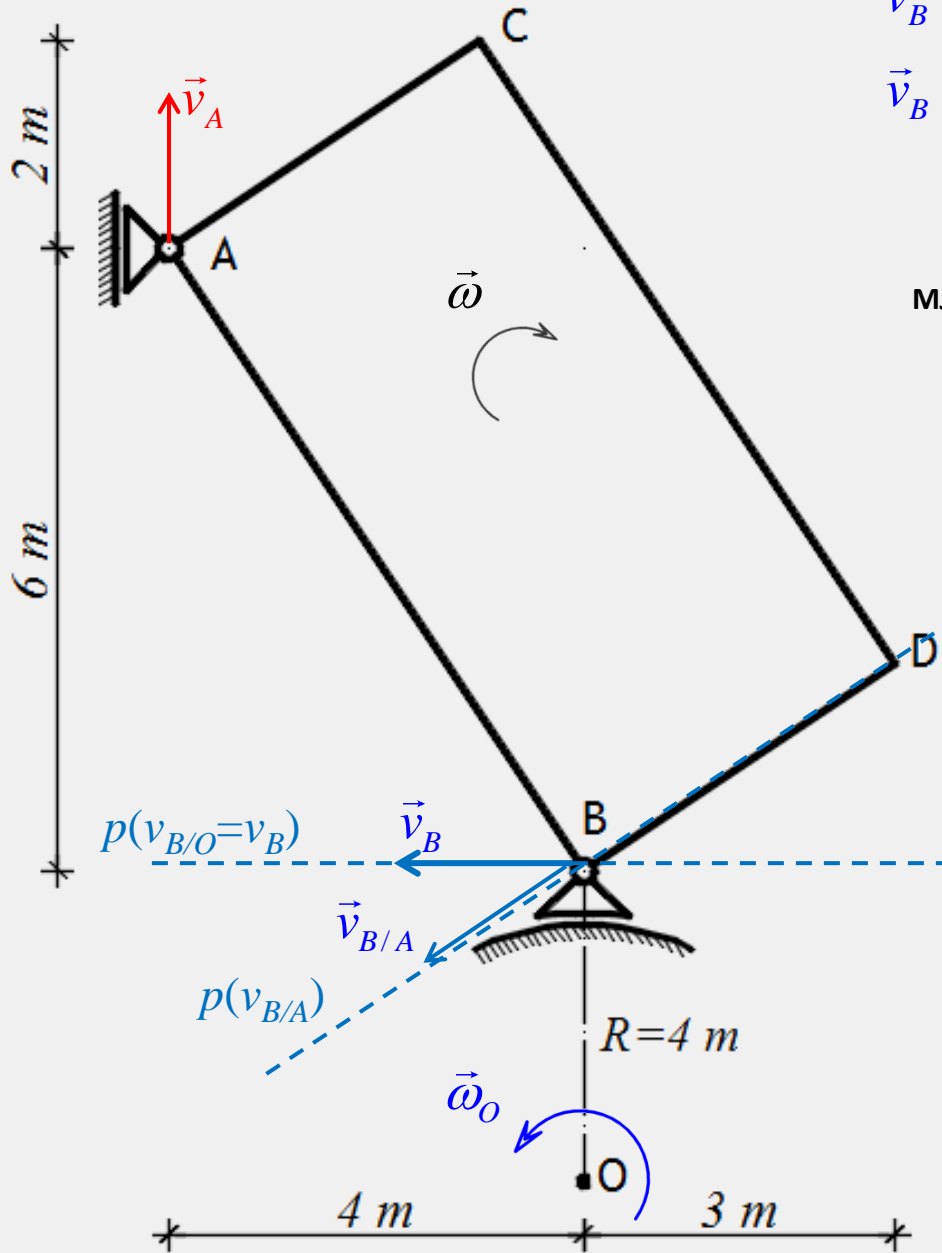
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# BRZINE

## Brzina točke B

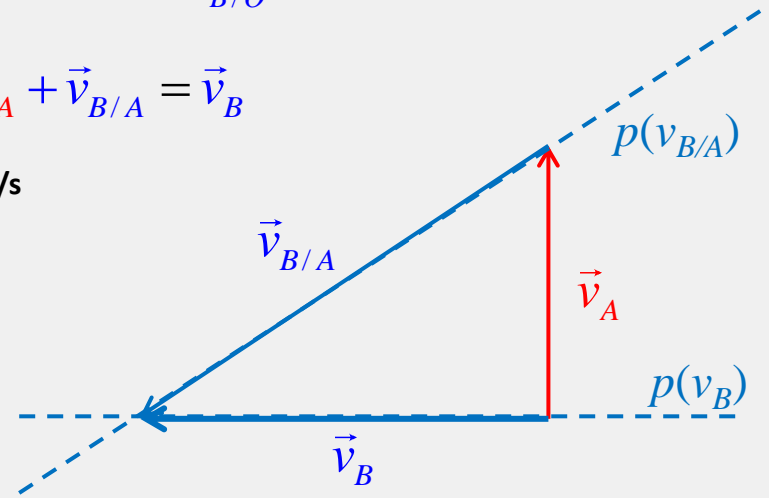


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$$\vec{v}_B = -6\vec{i}$$

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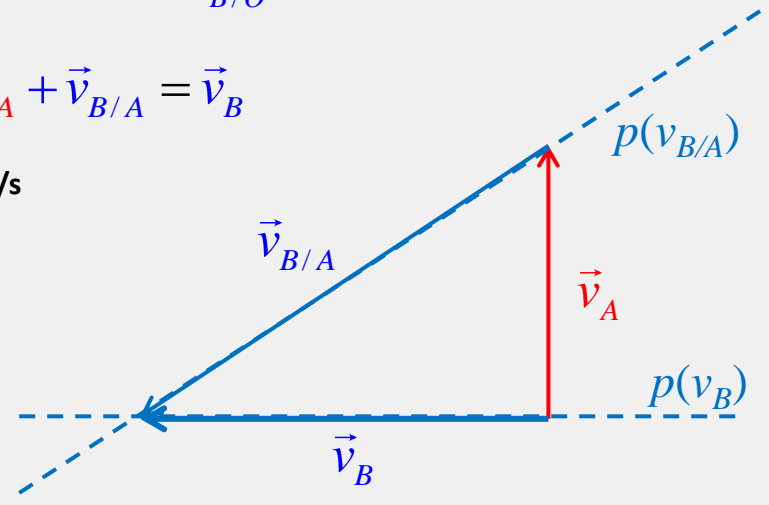
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MJ 1cm=1m/s



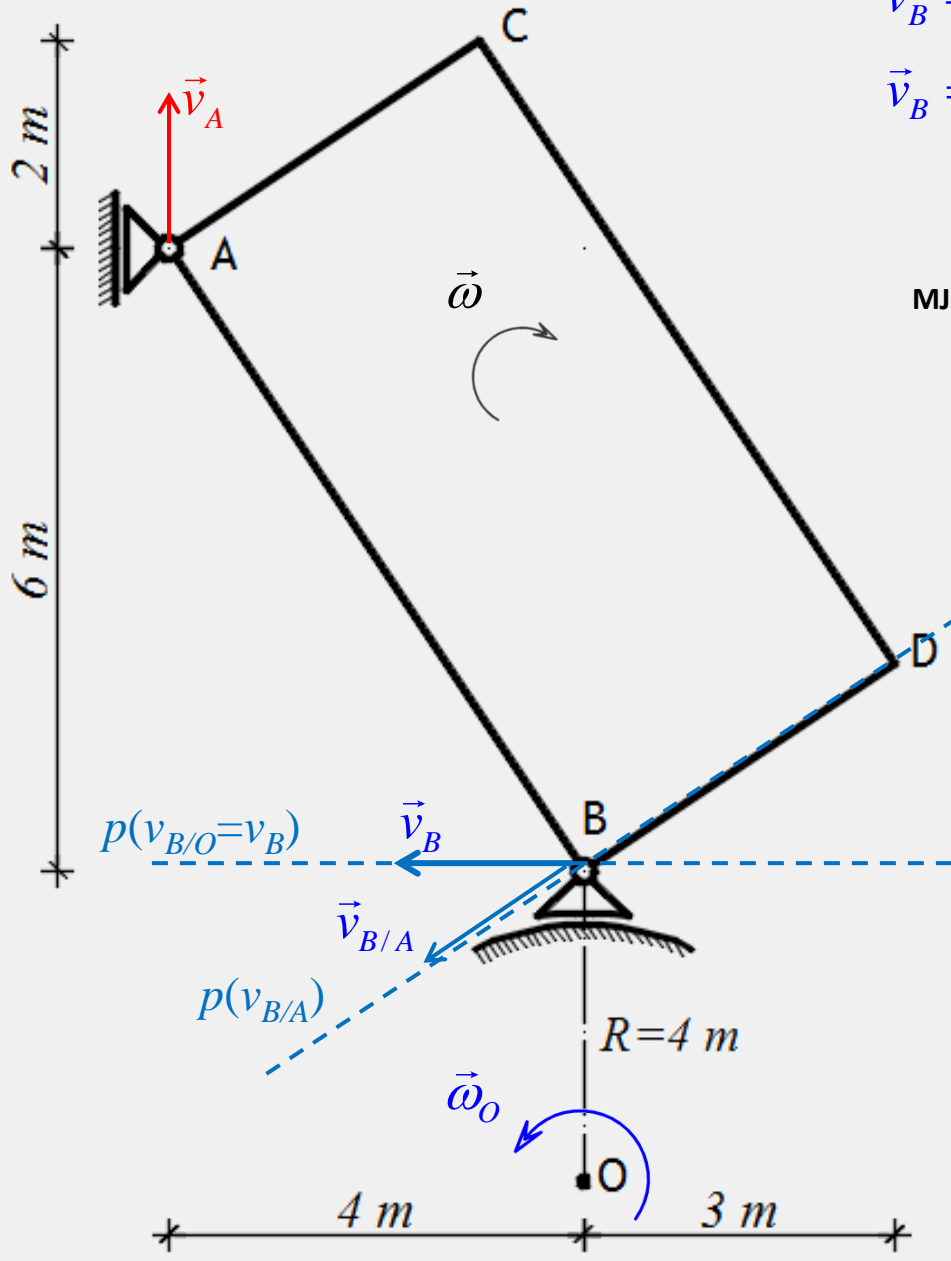
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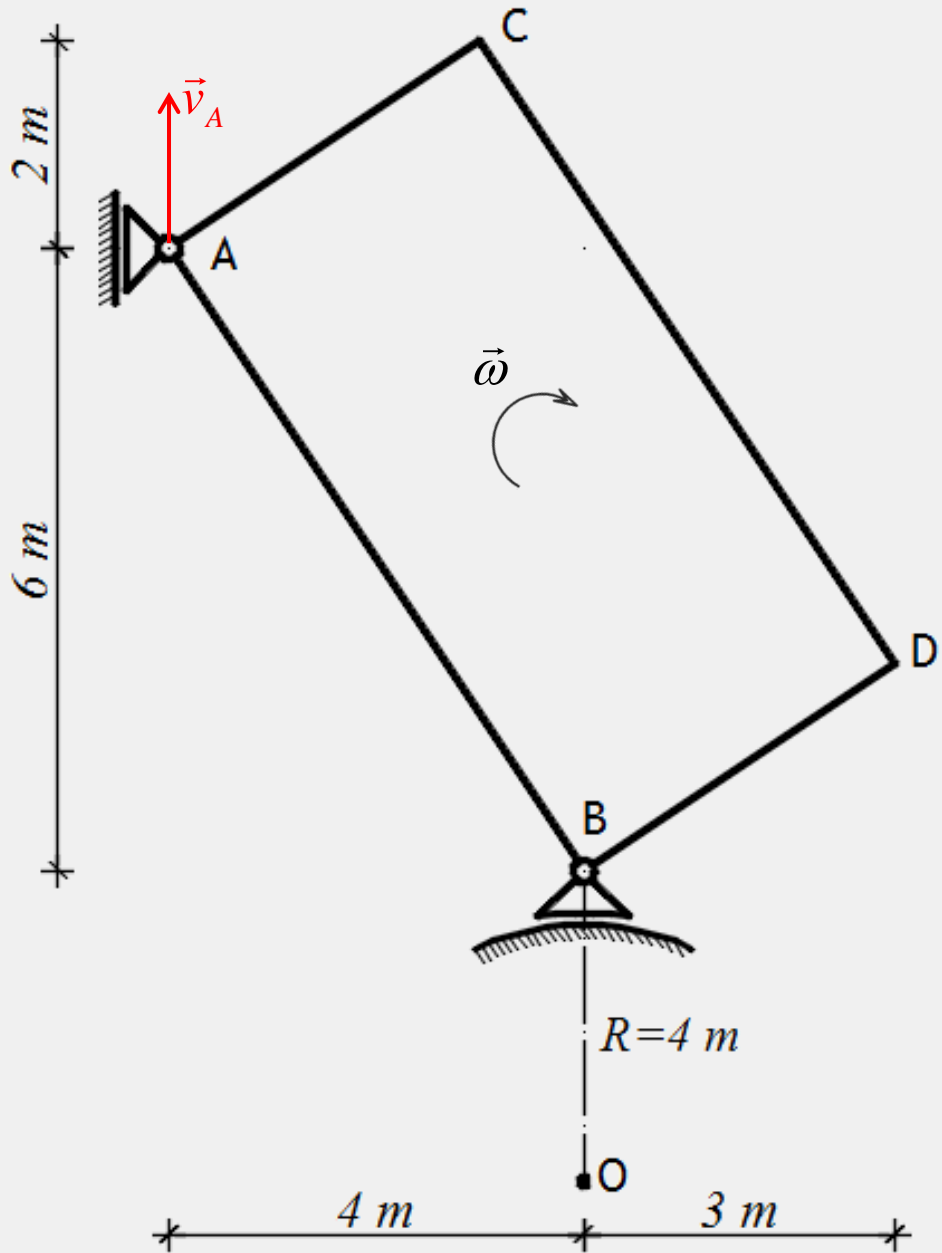
$$\vec{v}_B = -6\vec{i}$$

$$\omega = \frac{v_{B/A}}{AB} = \frac{7,2}{7,2} = 1 \text{ r/s} \quad \vec{\omega} = -\vec{k}$$

$$\omega_o = \frac{v_B}{R} = \frac{6}{4} = 1,5 \text{ r/s} \quad \vec{\omega}_o = 1,5\vec{k}$$



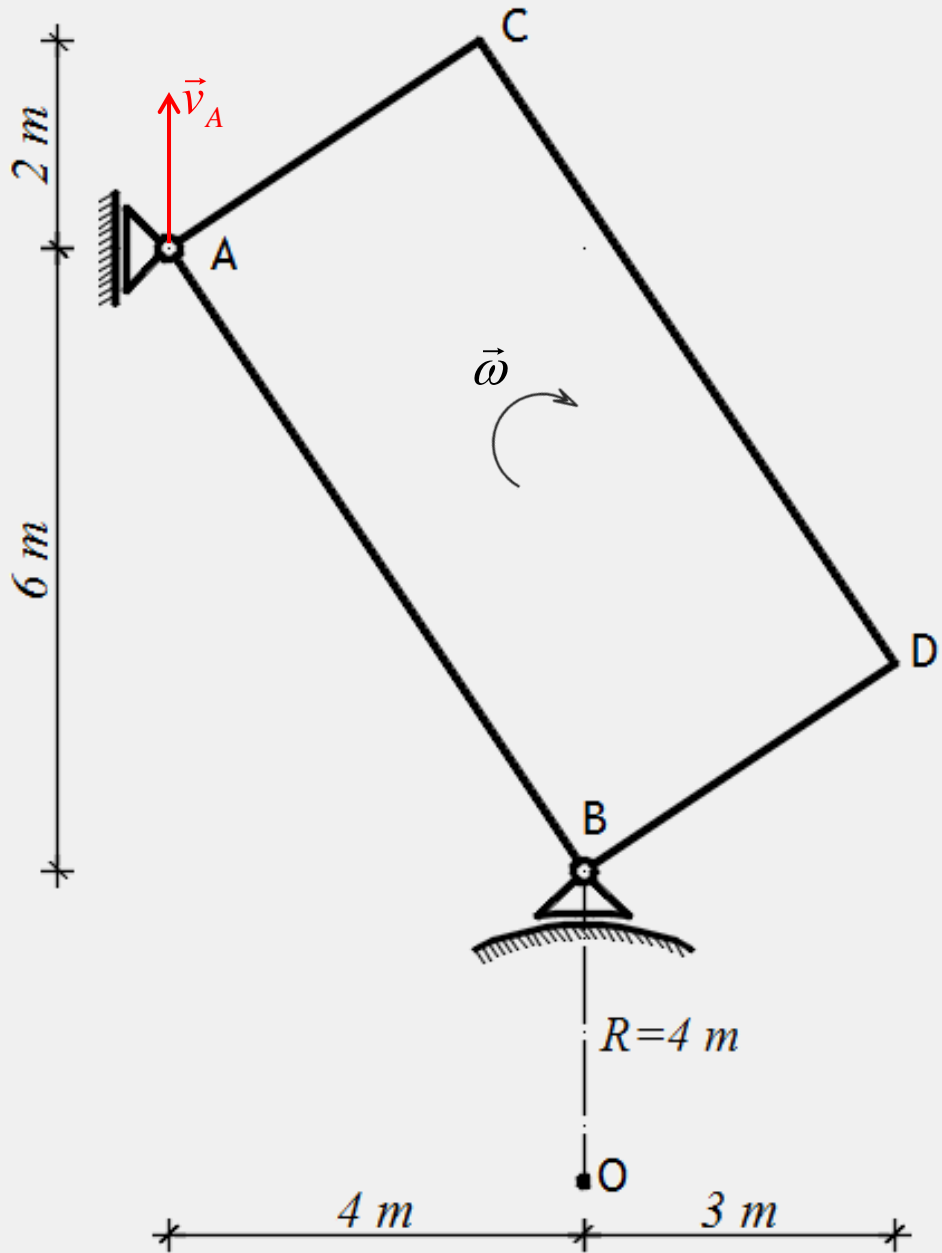
**BRZINE**



# BRZINE

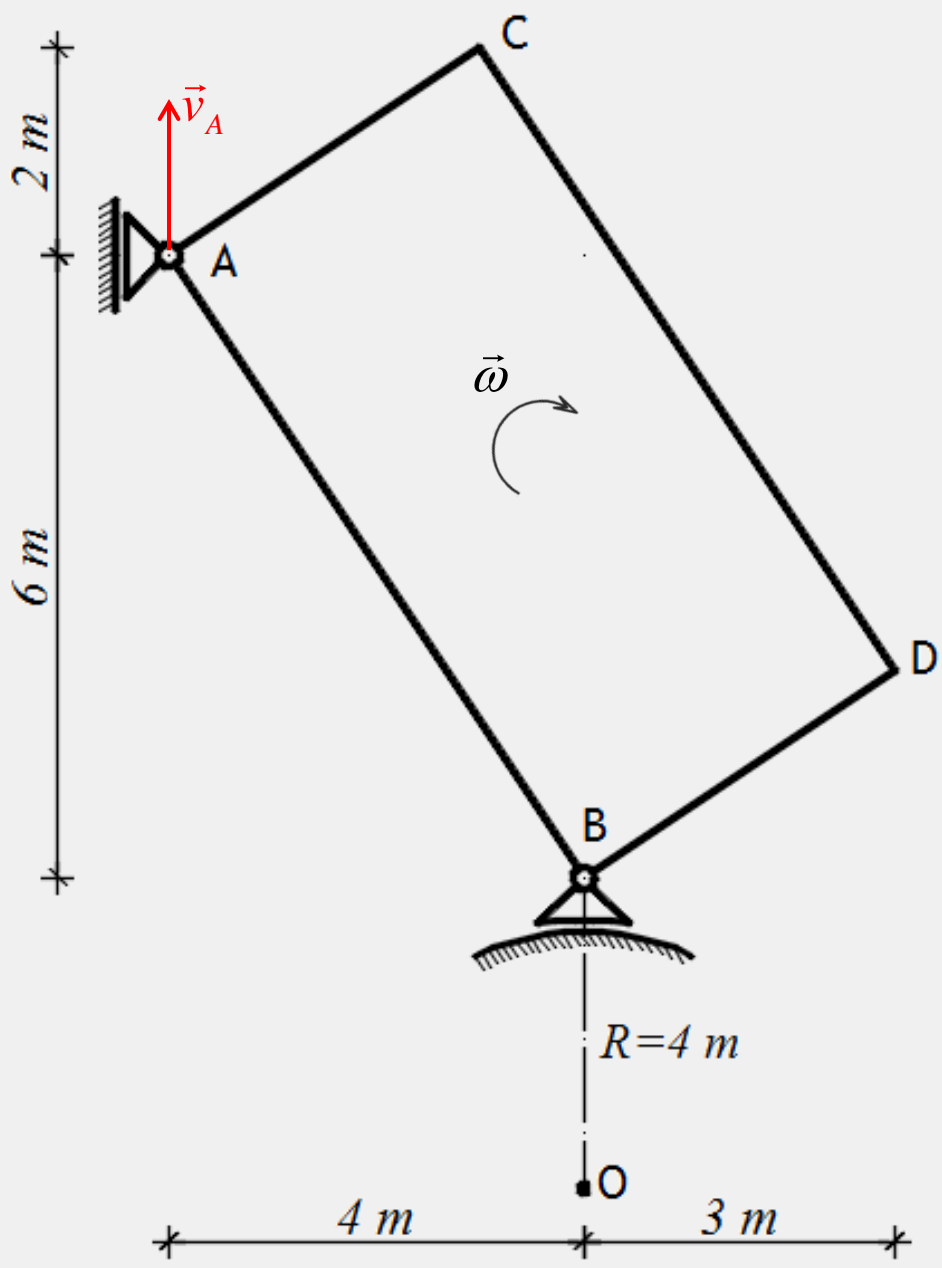
## Brzina točke C

$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$



# BRZINE

## Brzina točke C



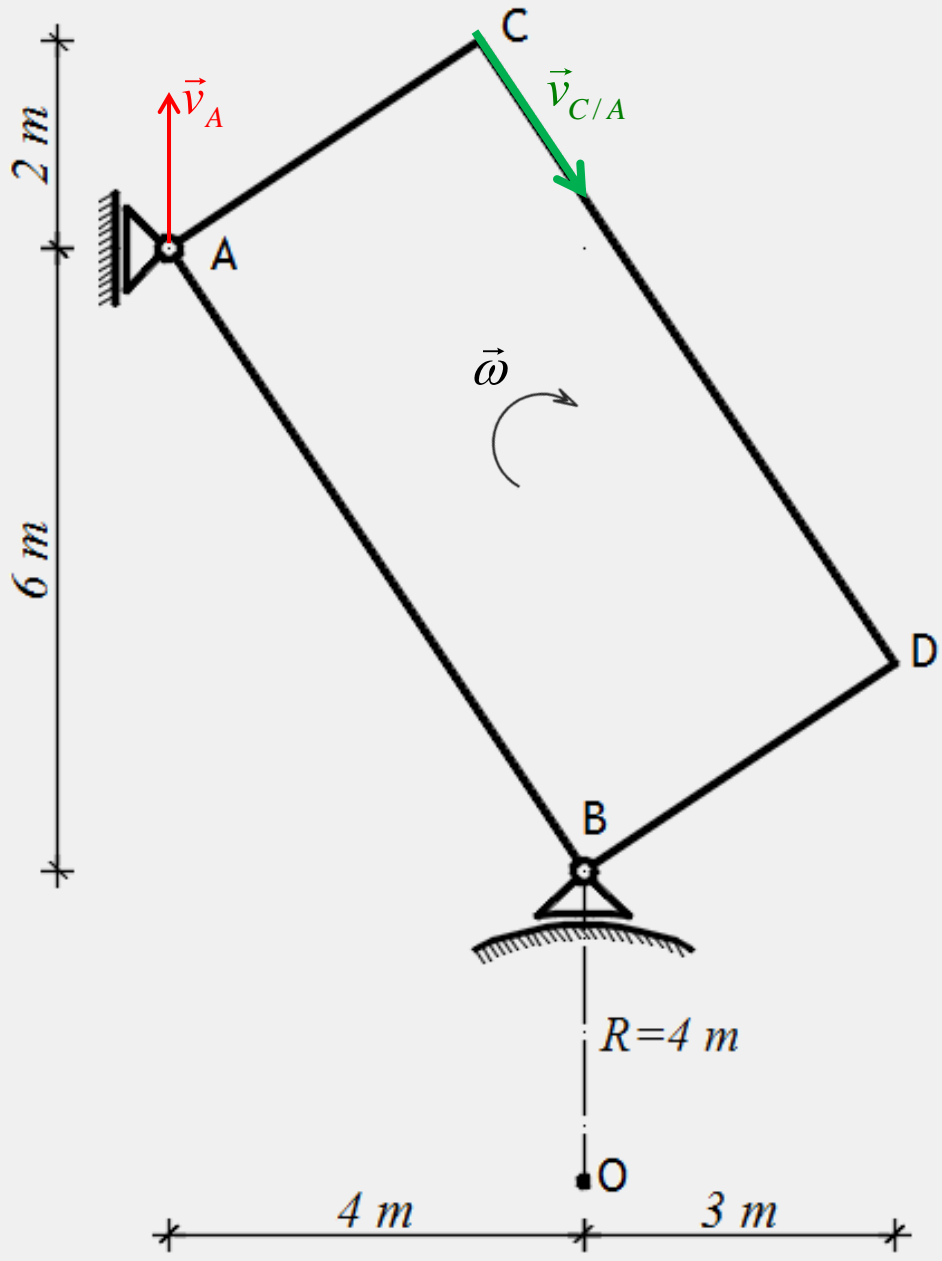
$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j}$$



# BRZINE

## Brzina točke C

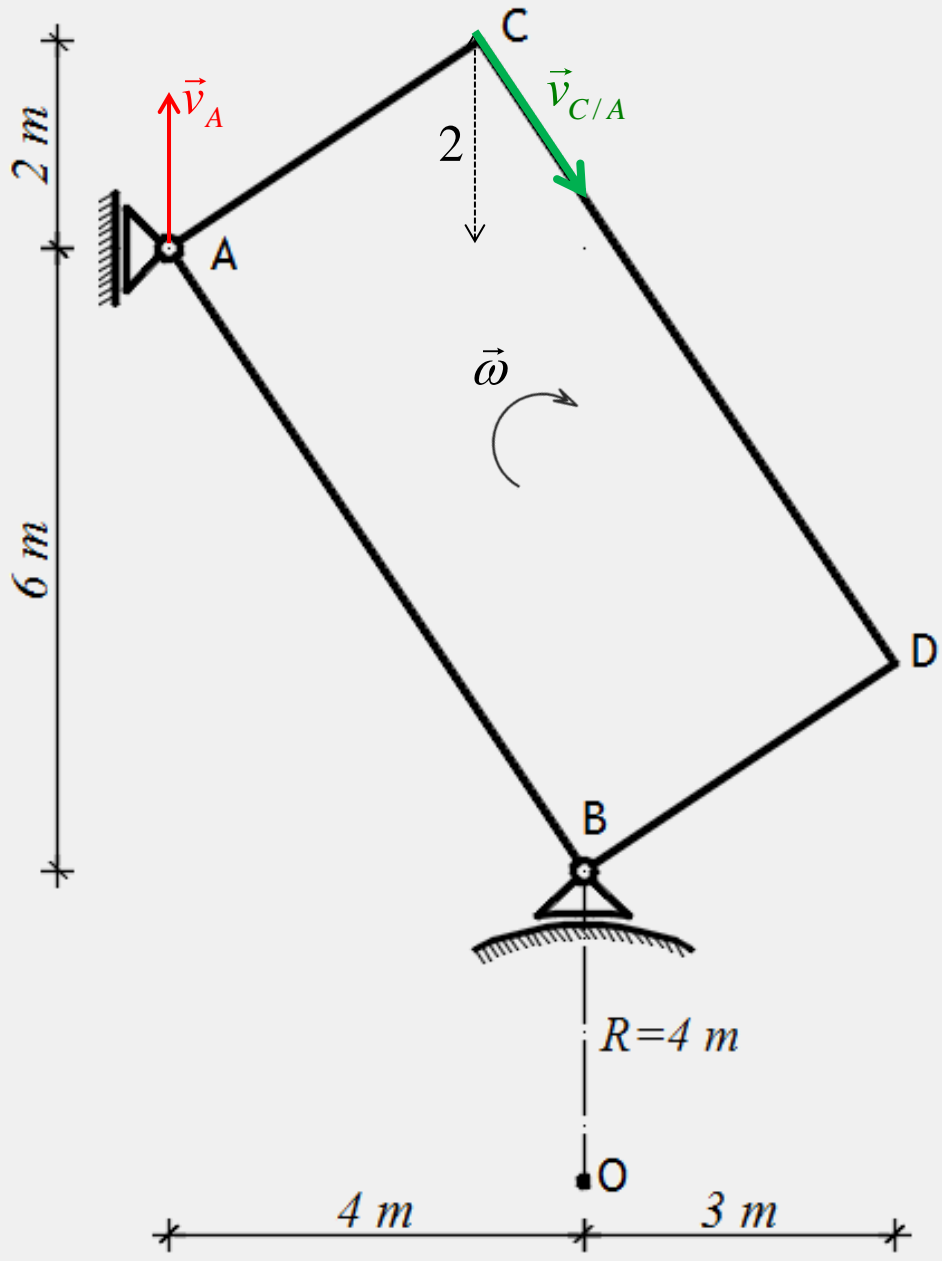


$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j}$$

# BRZINE

## Brzina točke C

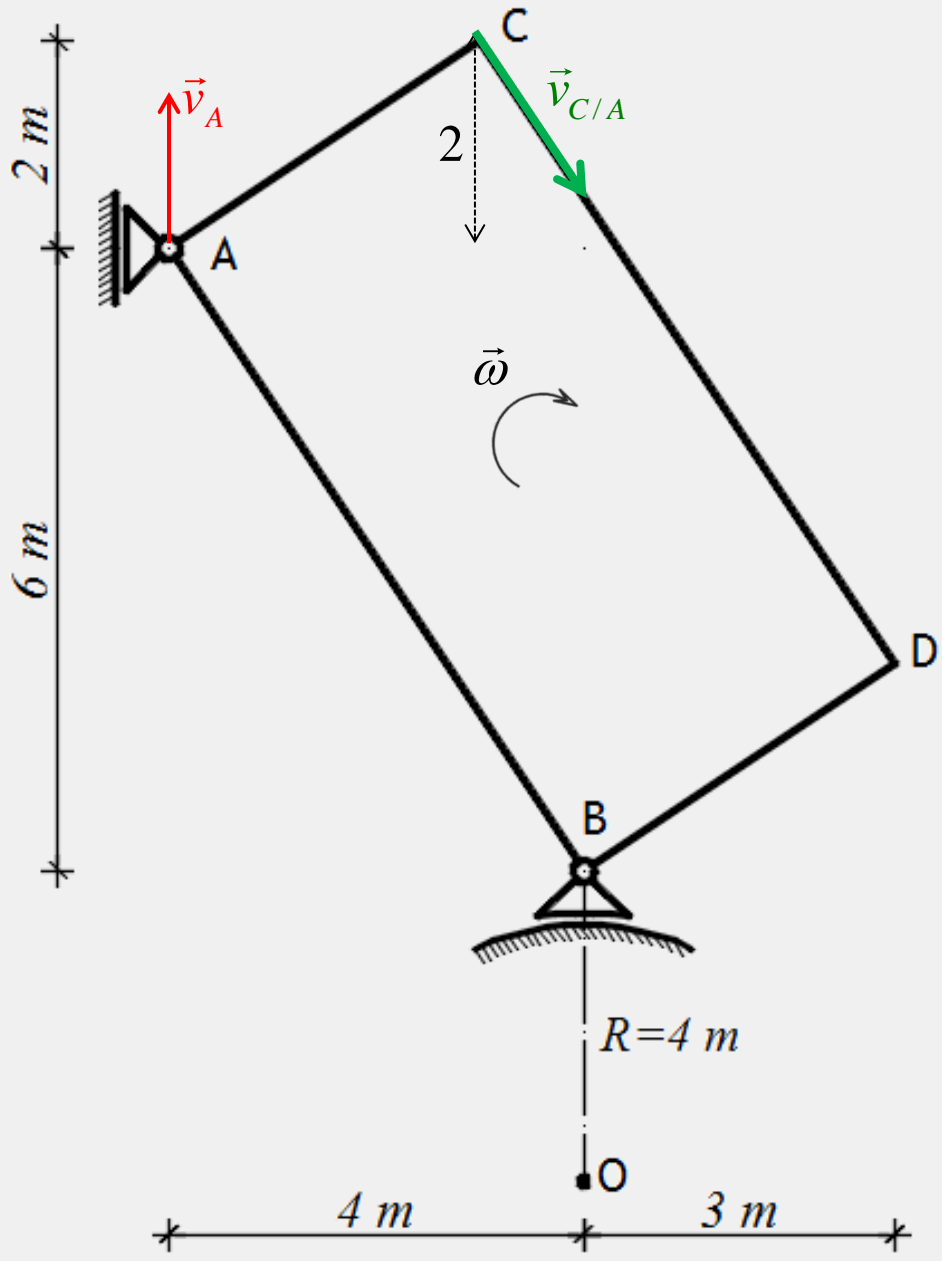


$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j}$$

# BRZINE

## Brzina točke C

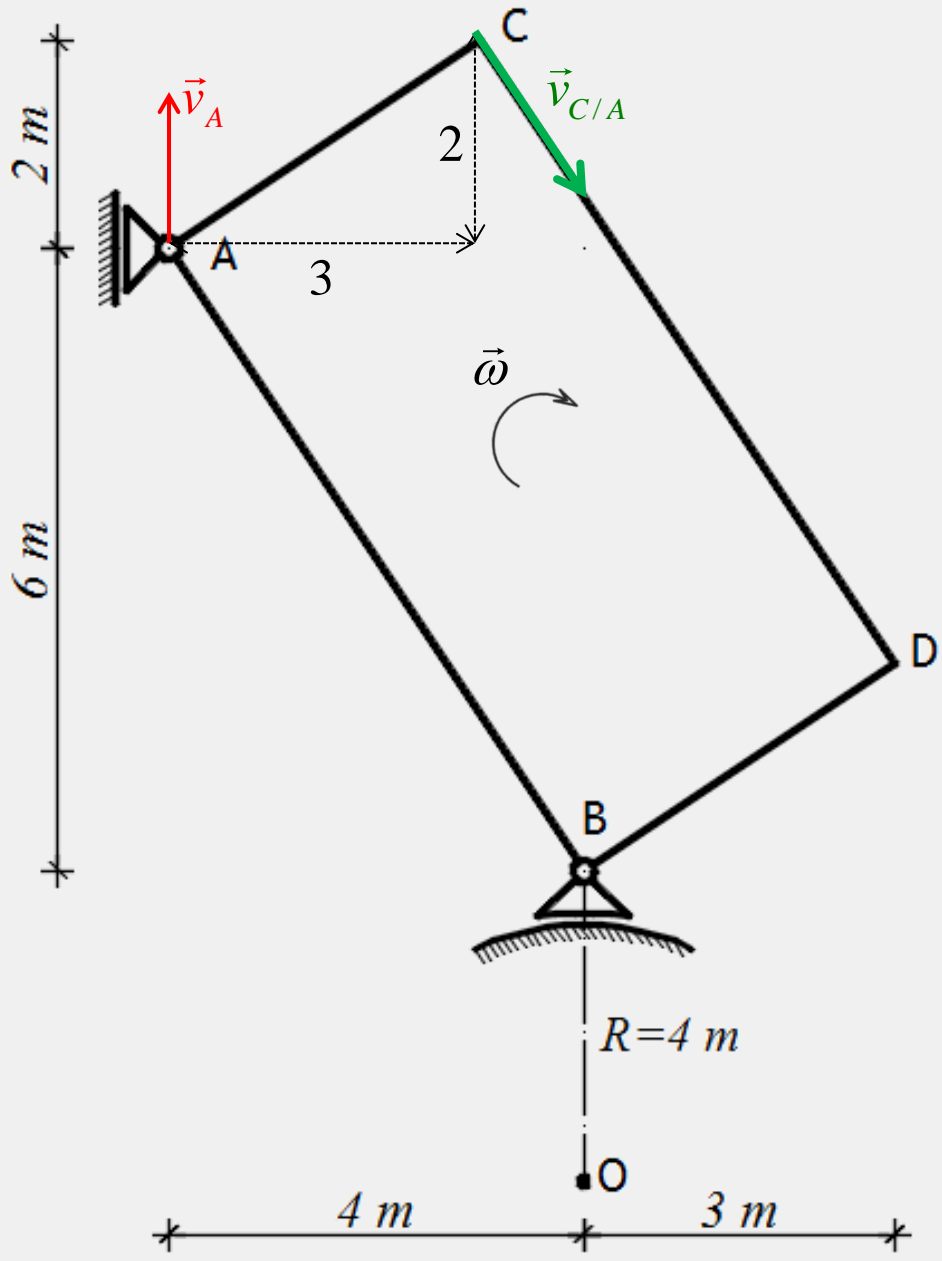


$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i}$$

# BRZINE

## Brzina točke C

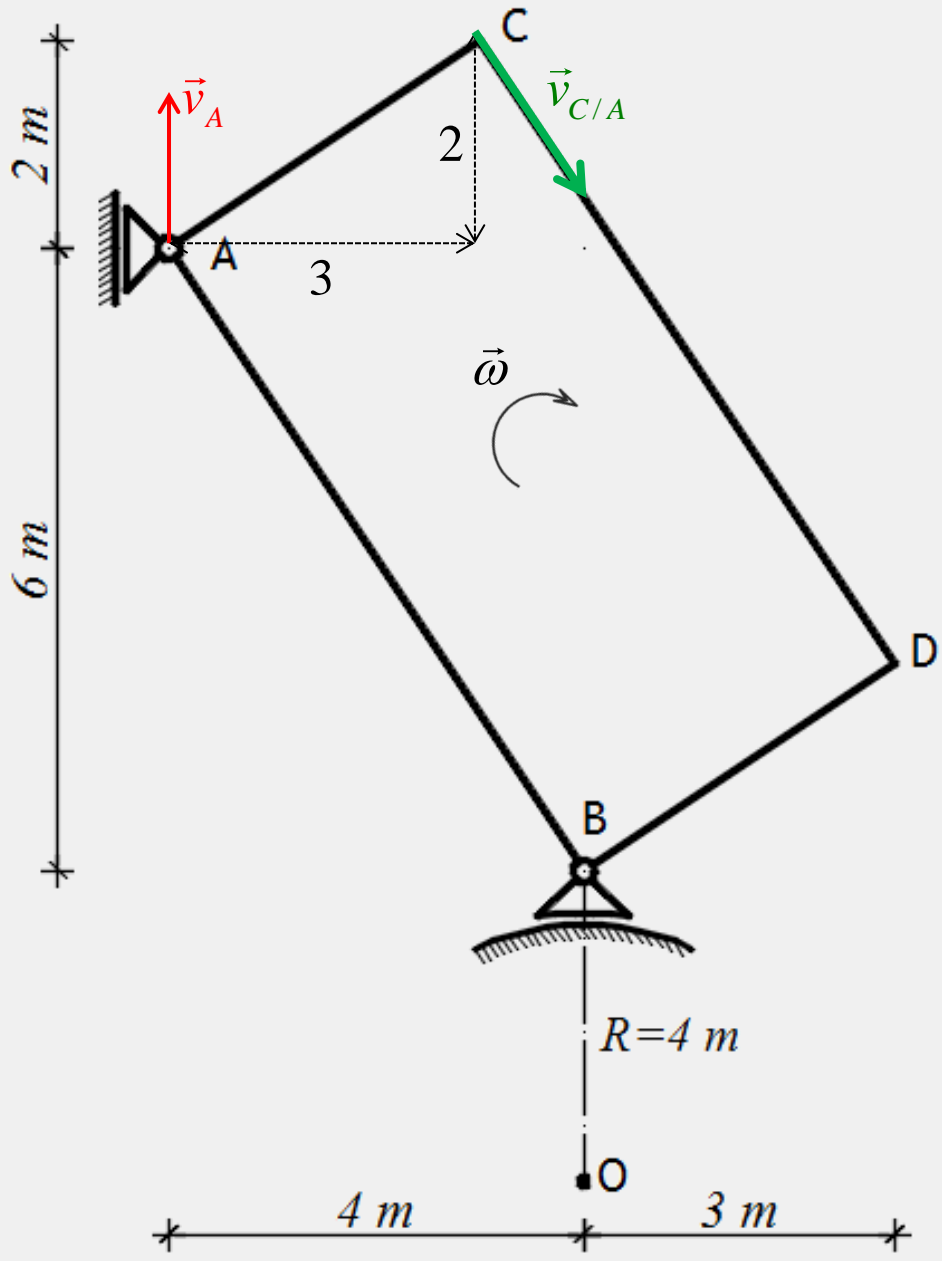


$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i}$$

# BRZINE

## Brzina točke C

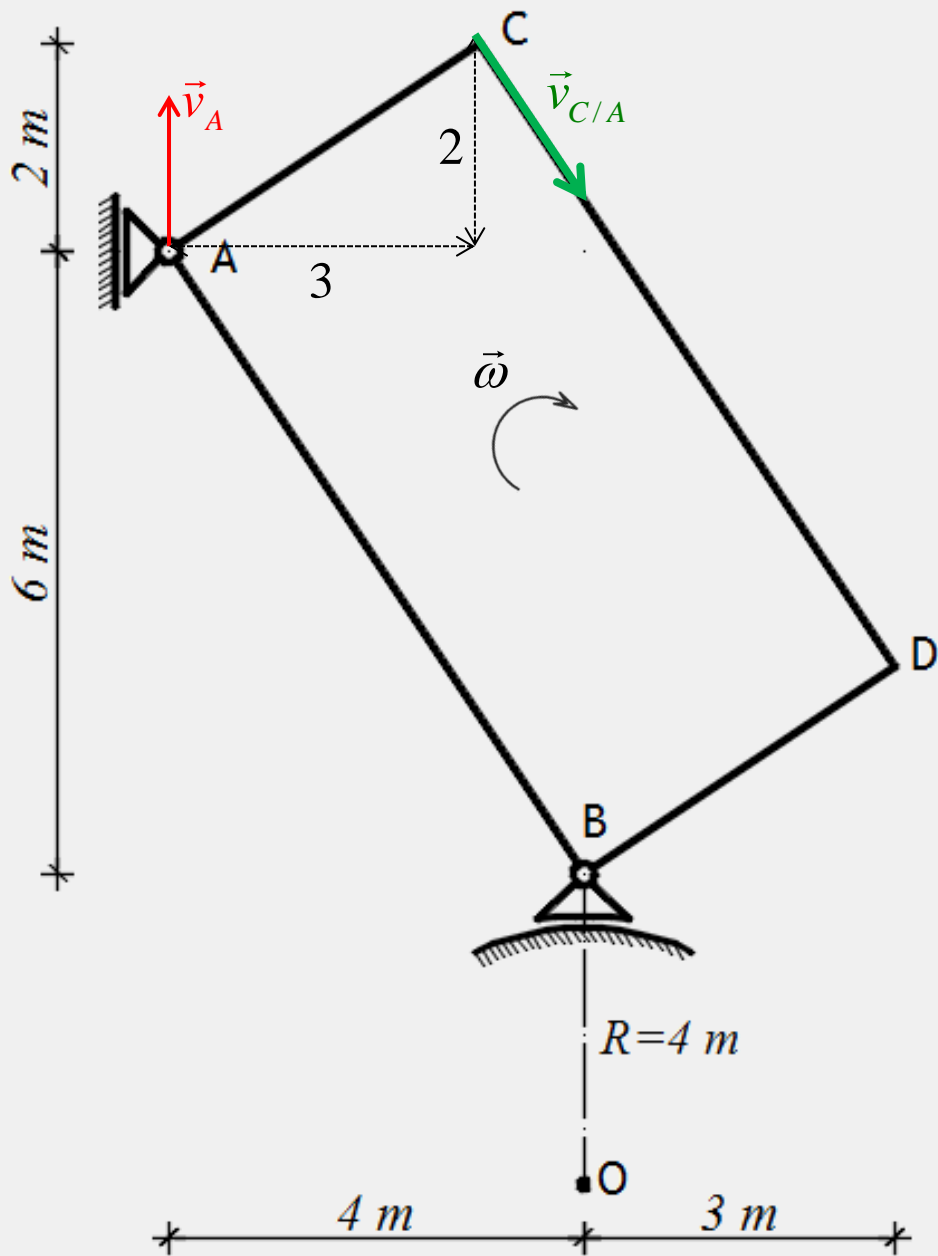


$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i} - 3\omega\vec{j}$$

# BRZINE

## Brzina točke C



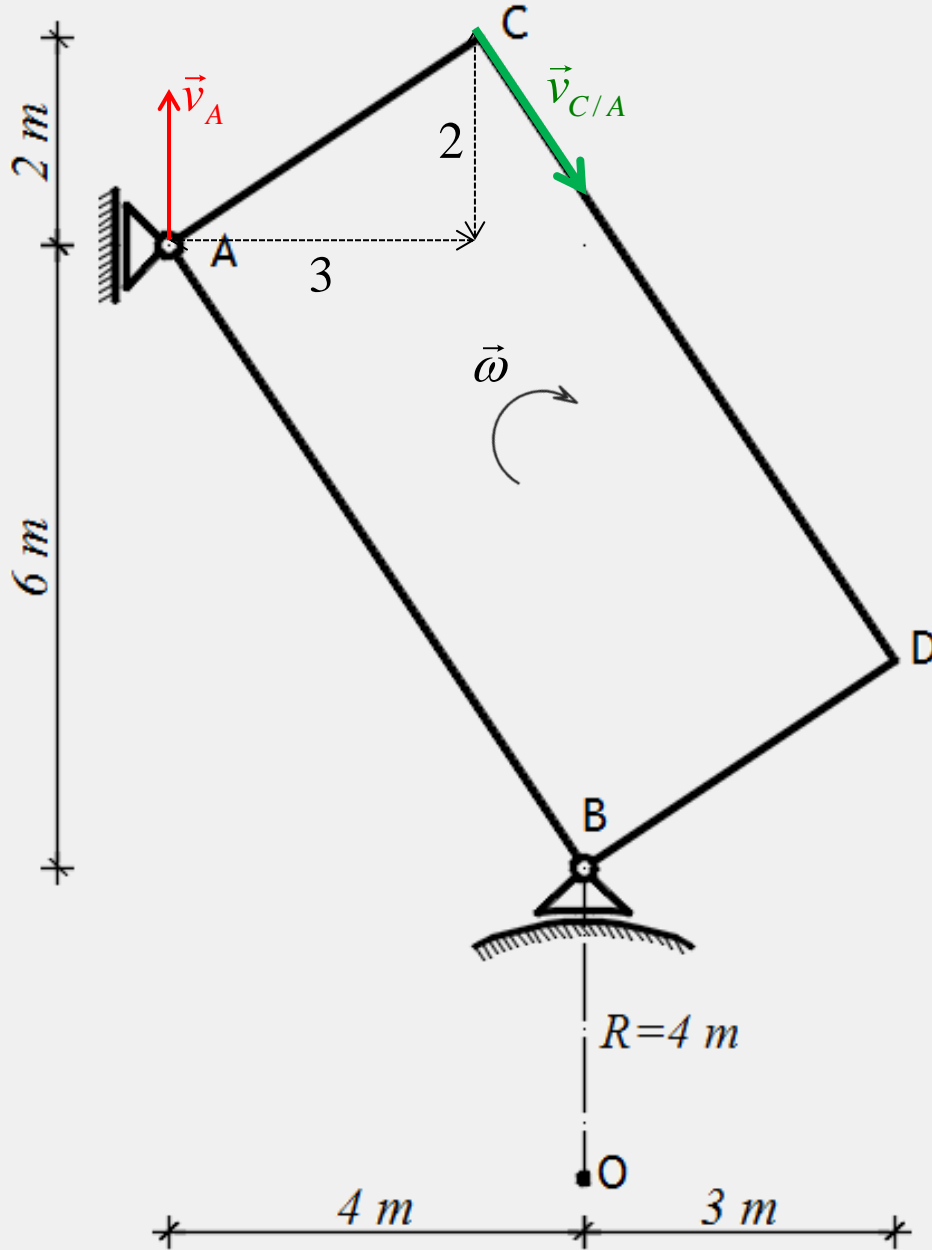
$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i} - 3\omega\vec{j}$$

$$\vec{v}_C = 2\vec{i} - \vec{j}$$

# BRZINE

## Brzina točke C



$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

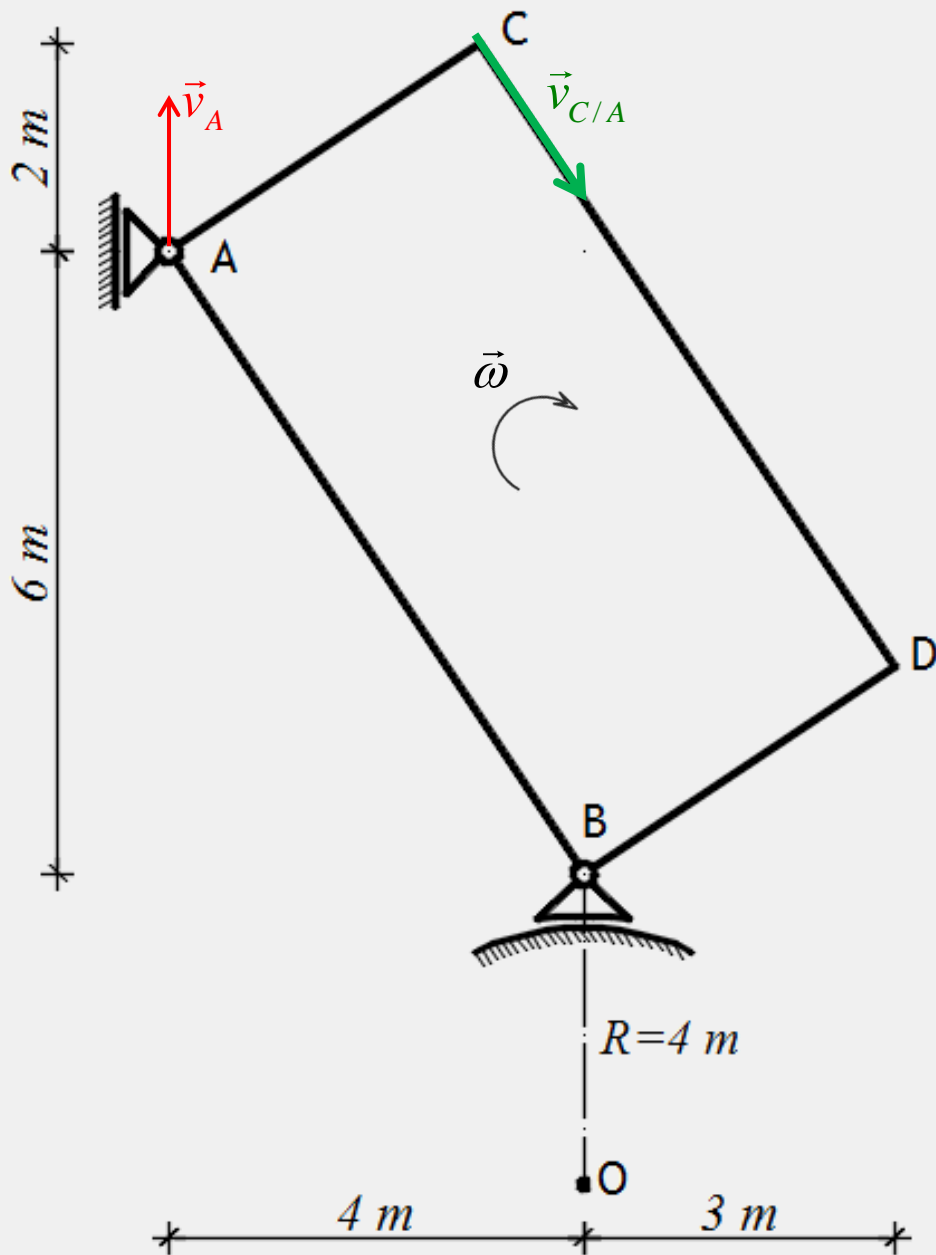
$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i} - 3\omega\vec{j}$$

$$\vec{v}_C = 2\vec{i} - \vec{j}$$

$$v_C = \sqrt{2^2 + 1^2} = 2,236\text{ m/s}$$

# BRZINE

## Brzina točke C



$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i} - 3\omega\vec{j}$$

$$\vec{v}_C = 2\vec{i} - \vec{j}$$

$$v_C = \sqrt{2^2 + 1^2} = 2,236\text{ m/s}$$



# BRZINE

## Brzina točke C

$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

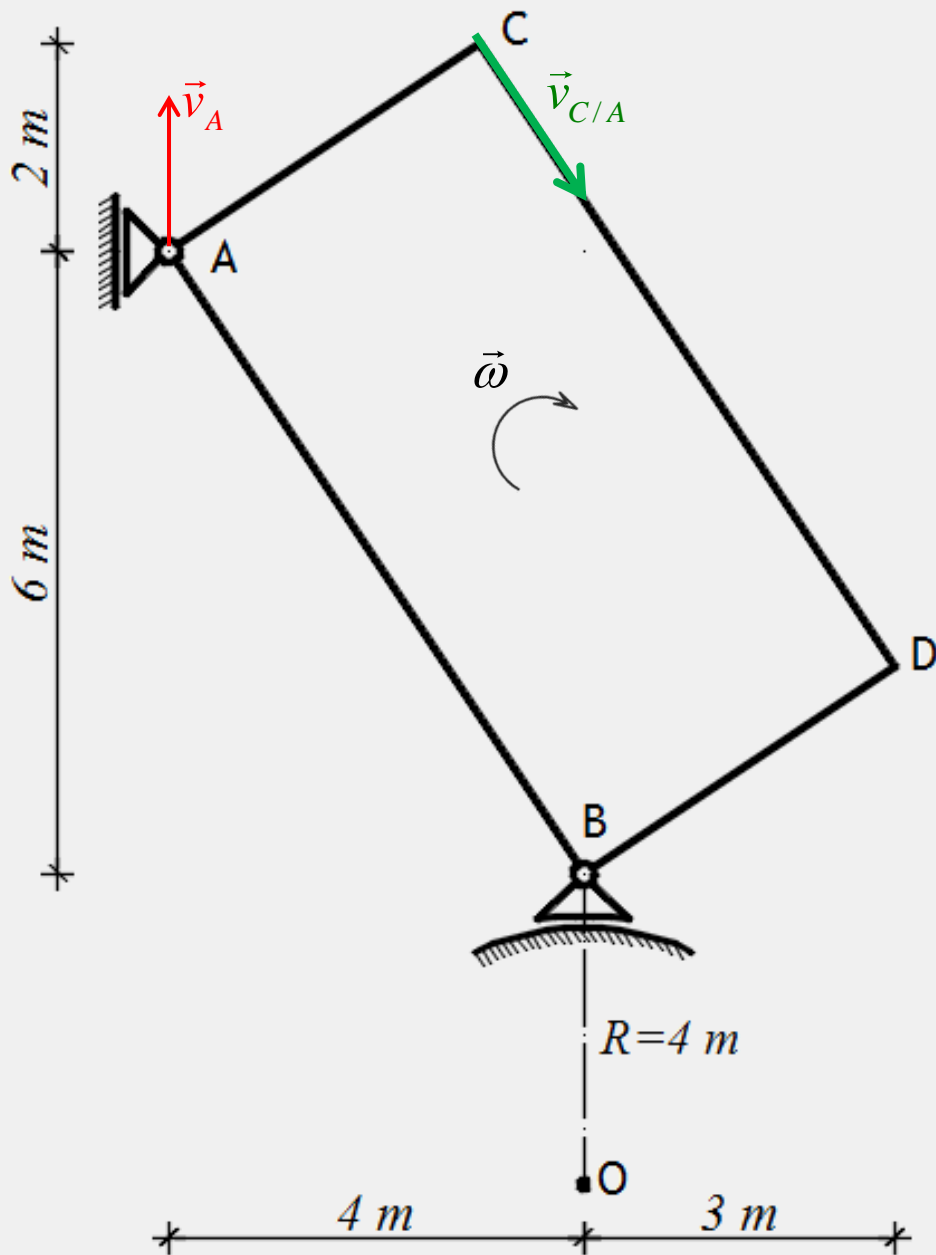
$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i} - 3\omega\vec{j}$$

$$\vec{v}_C = 2\vec{i} - \vec{j}$$

$$v_C = \sqrt{2^2 + 1^2} = 2,236 \text{ m/s}$$

## Brzina točke D

$$\vec{v}_D = \vec{v}_A + \vec{v}_{D/A}$$



# BRZINE

## Brzina točke C

$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

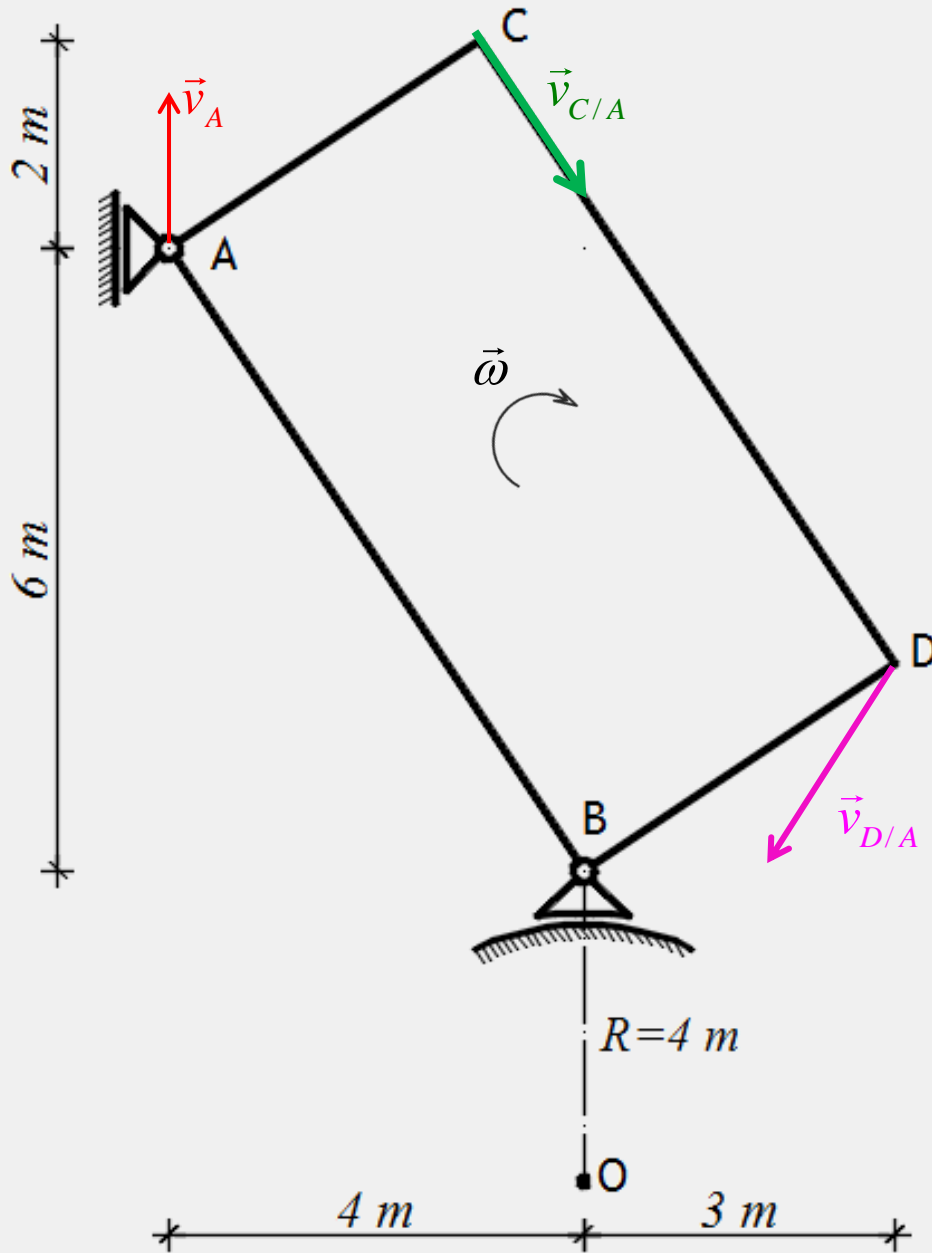
$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i} - 3\omega\vec{j}$$

$$\vec{v}_C = 2\vec{i} - \vec{j}$$

$$v_C = \sqrt{2^2 + 1^2} = 2,236 \text{ m/s}$$

## Brzina točke D

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# BRZINE

## Brzina točke C

$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i} - 3\omega\vec{j}$$

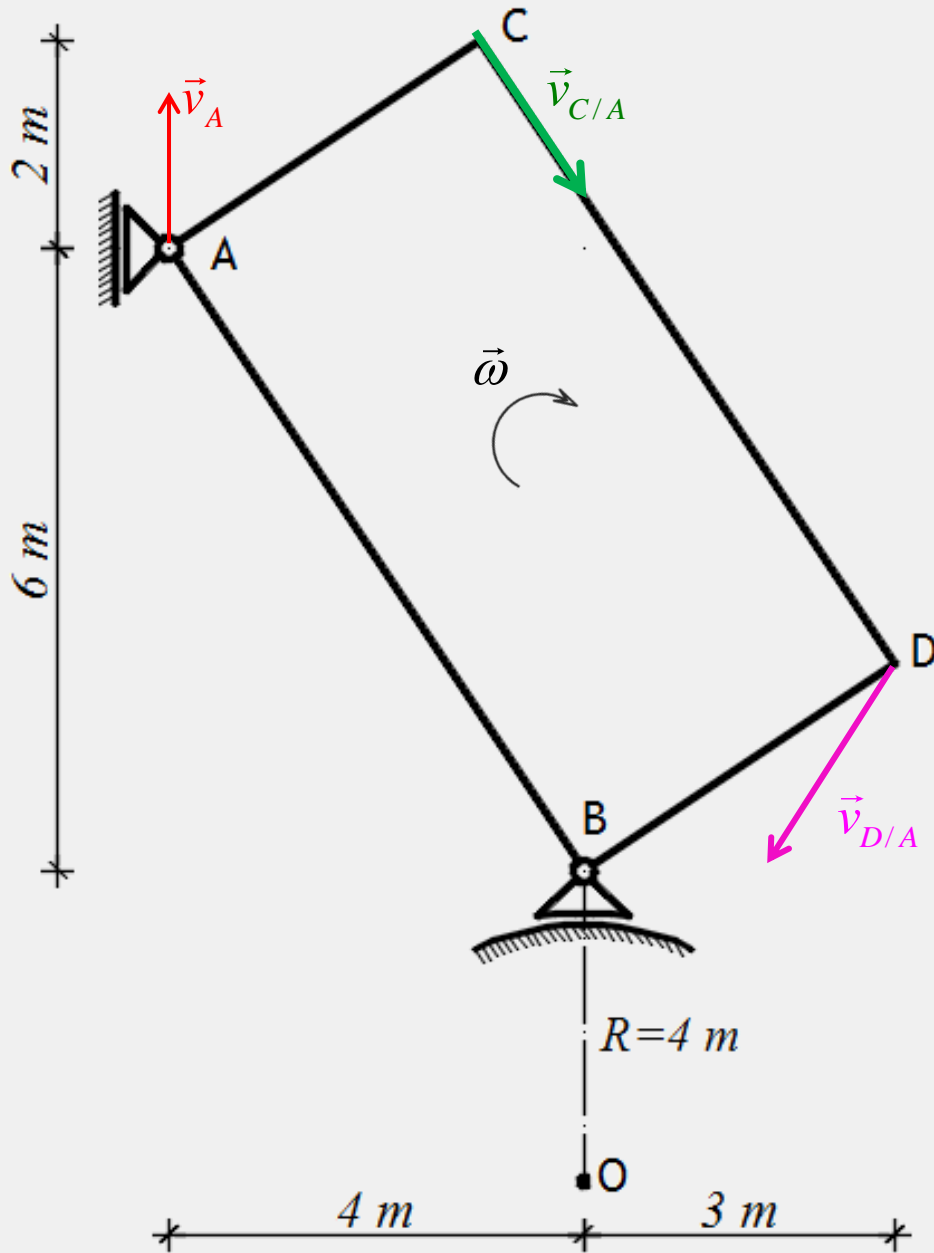
$$\vec{v}_C = 2\vec{i} - \vec{j}$$

$$v_C = \sqrt{2^2 + 1^2} = 2,236 \text{ m/s}$$

## Brzina točke D

$$\vec{v}_D = \vec{v}_A + \vec{v}_{D/A}$$

$$\vec{v}_D = 4\vec{j}$$



# BRZINE

## Brzina točke C

$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i} - 3\omega\vec{j}$$

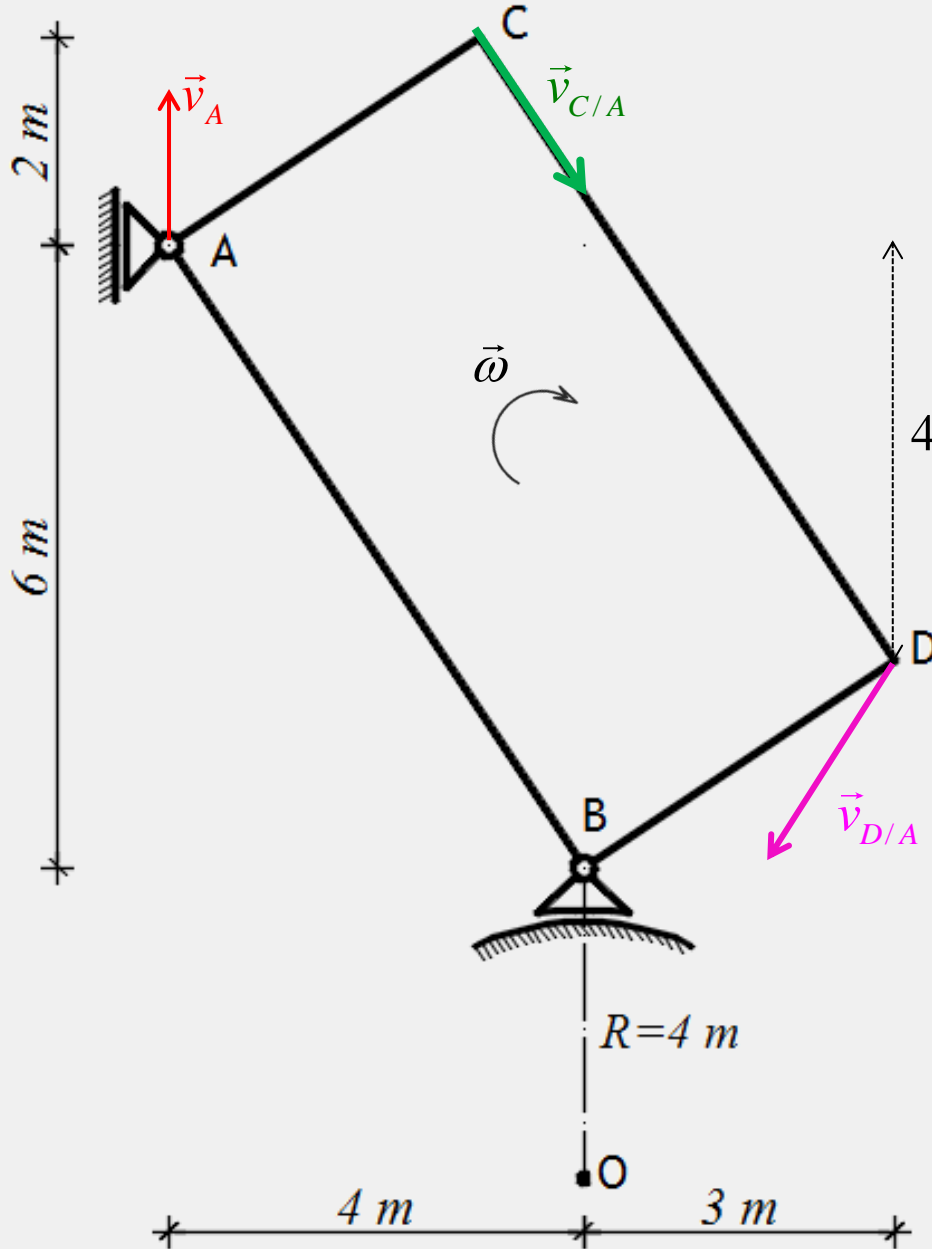
$$\vec{v}_C = 2\vec{i} - \vec{j}$$

$$v_C = \sqrt{2^2 + 1^2} = 2,236 \text{ m/s}$$

## Brzina točke D

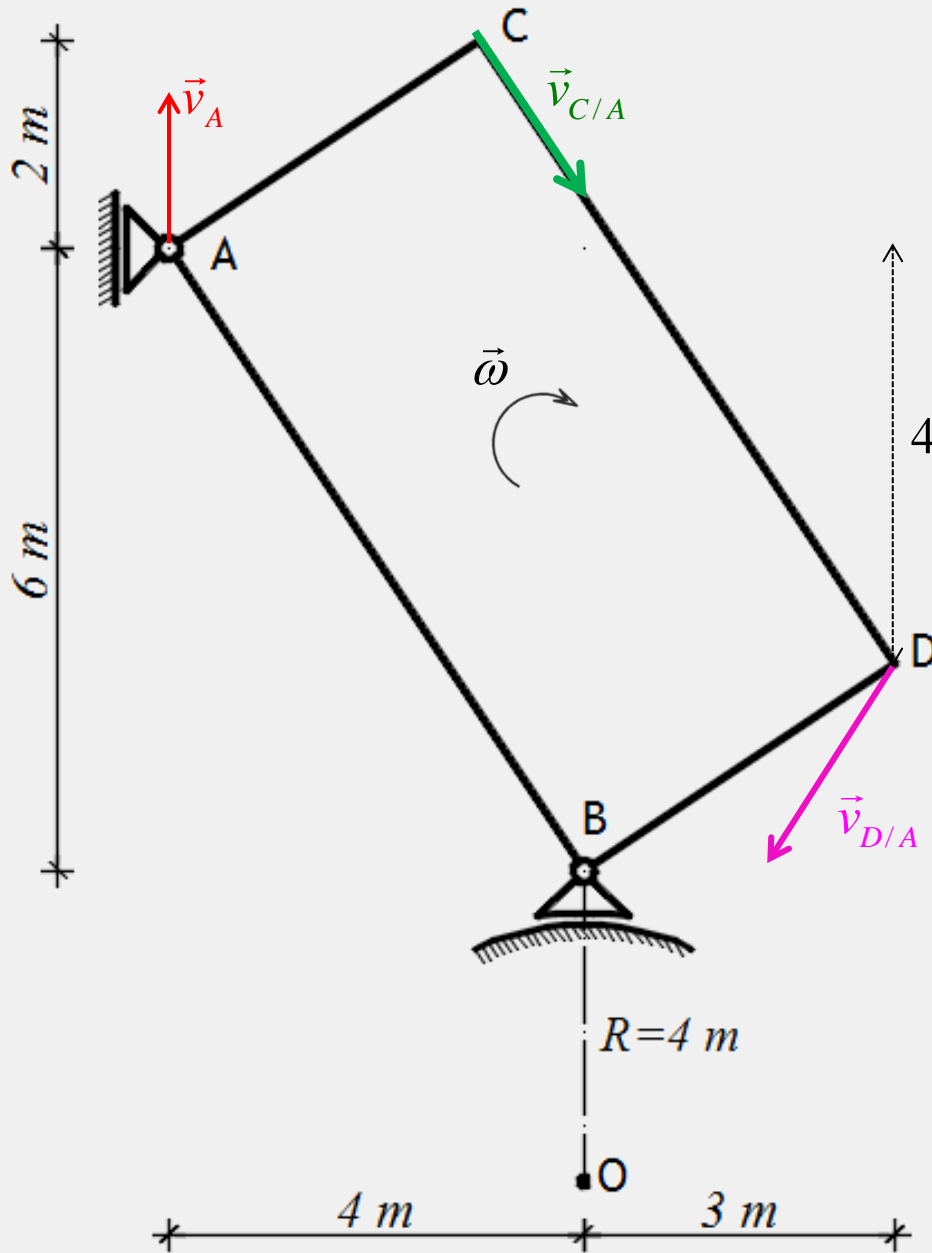
$$\vec{v}_D = \vec{v}_A + \vec{v}_{D/A}$$

$$\vec{v}_D = 4\vec{j}$$



# BRZINE

## Brzina točke C



$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i} - 3\omega\vec{j}$$

$$\vec{v}_C = 2\vec{i} - \vec{j}$$

$$v_C = \sqrt{2^2 + 1^2} = 2,236 \text{ m/s}$$

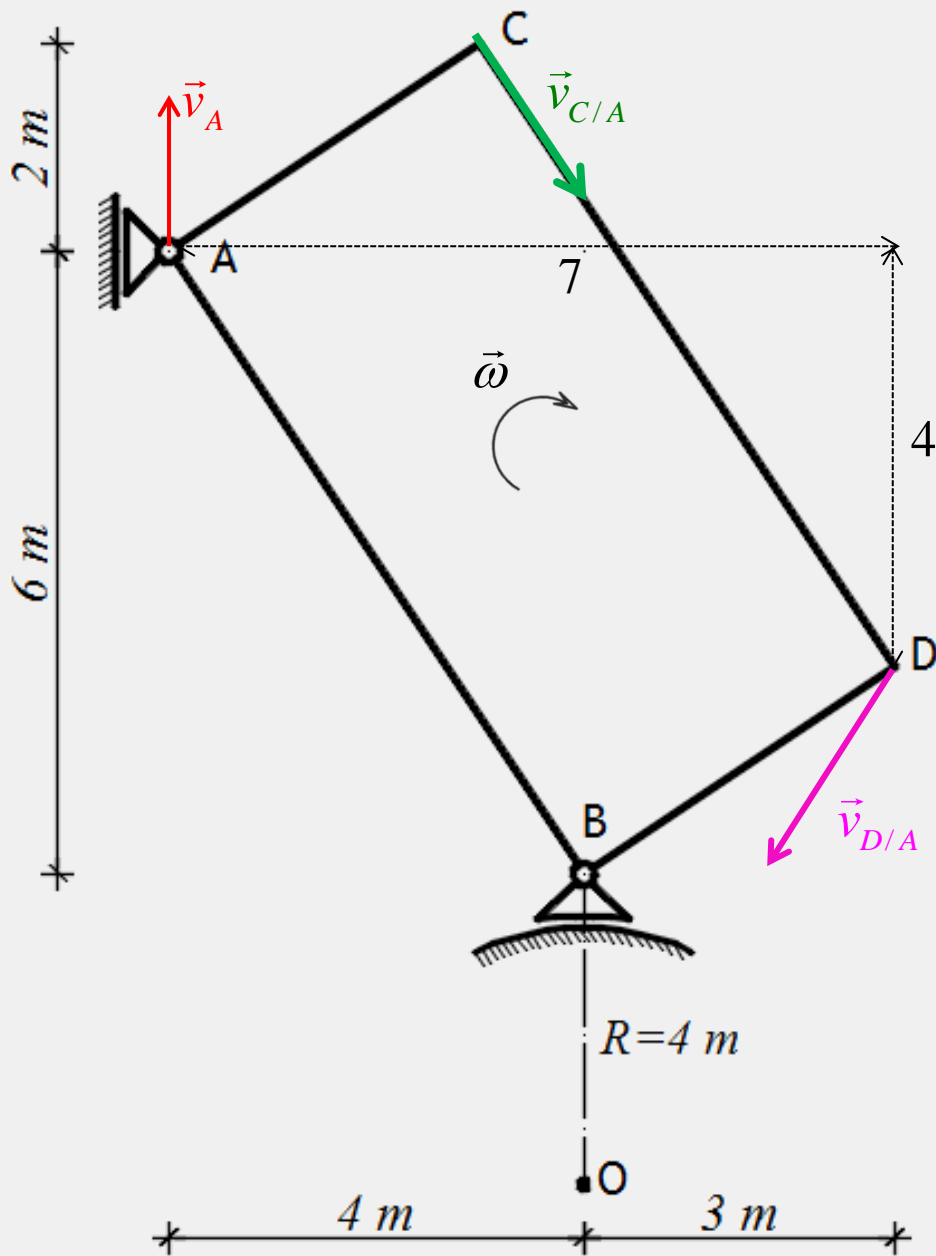
## Brzina točke D

$$\vec{v}_D = \vec{v}_A + \vec{v}_{D/A}$$

$$\vec{v}_D = 4\vec{j} - 4\omega\vec{i}$$

# BRZINE

## Brzina točke C



$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i} - 3\omega\vec{j}$$

$$\vec{v}_C = 2\vec{i} - \vec{j}$$

$$v_C = \sqrt{2^2 + 1^2} = 2,236 \text{ m/s}$$

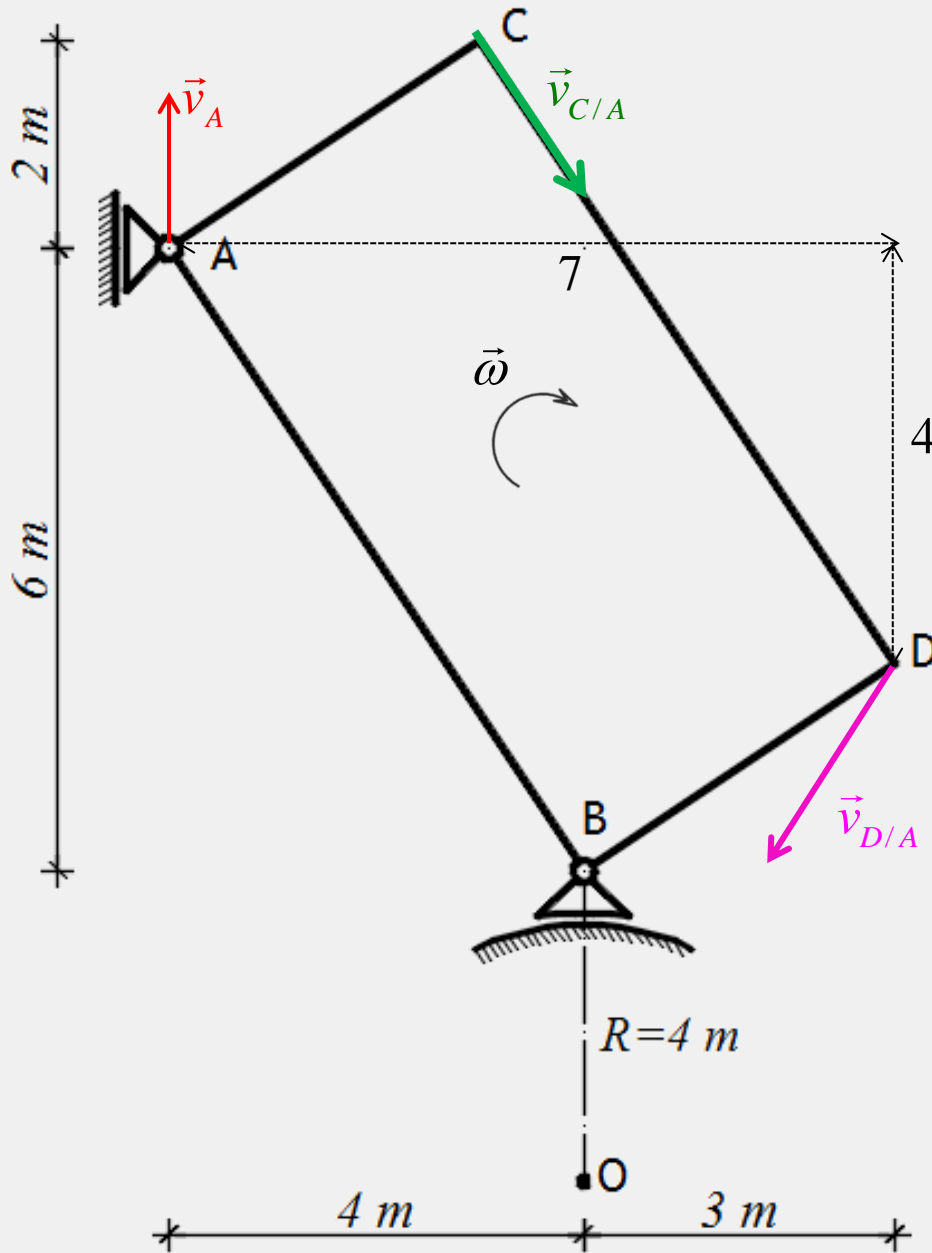
## Brzina točke D

$$\vec{v}_D = \vec{v}_A + \vec{v}_{D/A}$$

$$\vec{v}_D = 4\vec{j} - 4\omega\vec{i}$$

# BRZINE

## Brzina točke C



$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i} - 3\omega\vec{j}$$

$$\vec{v}_C = 2\vec{i} - \vec{j}$$

$$v_C = \sqrt{2^2 + 1^2} = 2,236\text{ m/s}$$

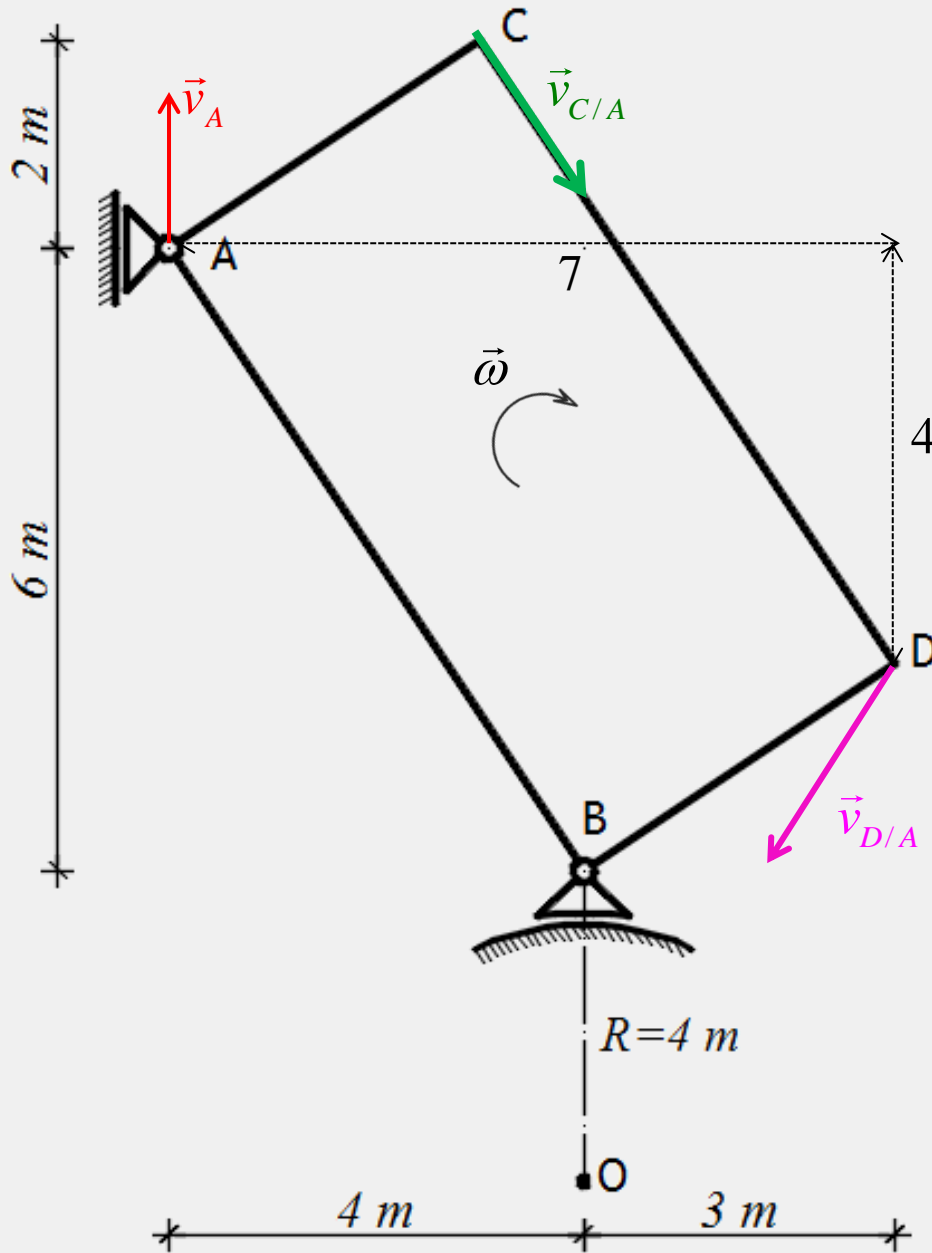
## Brzina točke D

$$\vec{v}_D = \vec{v}_A + \vec{v}_{D/A}$$

$$\vec{v}_D = 4\vec{j} - 4\omega\vec{i} - 7\omega\vec{j}$$

# BRZINE

## Brzina točke C



$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i} - 3\omega\vec{j}$$

$$\vec{v}_C = 2\vec{i} - \vec{j}$$

$$v_C = \sqrt{2^2 + 1^2} = 2,236 \text{ m/s}$$

## Brzina točke D

$$\vec{v}_D = \vec{v}_A + \vec{v}_{D/A}$$

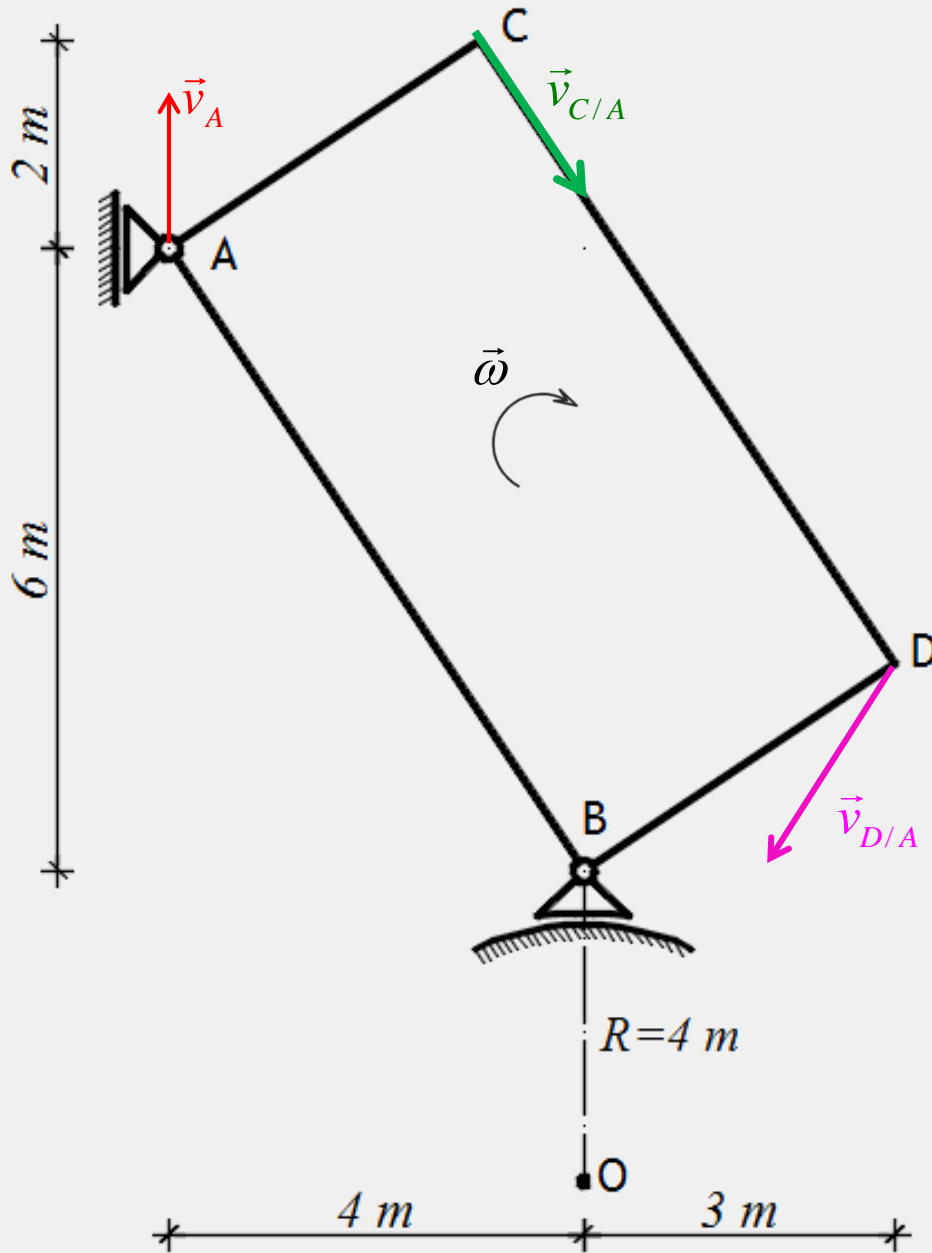
$$\vec{v}_D = 4\vec{j} - 4\omega\vec{i} - 7\omega\vec{j}$$

$$\vec{v}_D = -4\vec{i} - 3\vec{j}$$



# BRZINE

## Brzina točke C



$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i} - 3\omega\vec{j}$$

$$\vec{v}_C = 2\vec{i} - \vec{j}$$

$$v_C = \sqrt{2^2 + 1^2} = 2,236 \text{ m/s}$$

## Brzina točke D

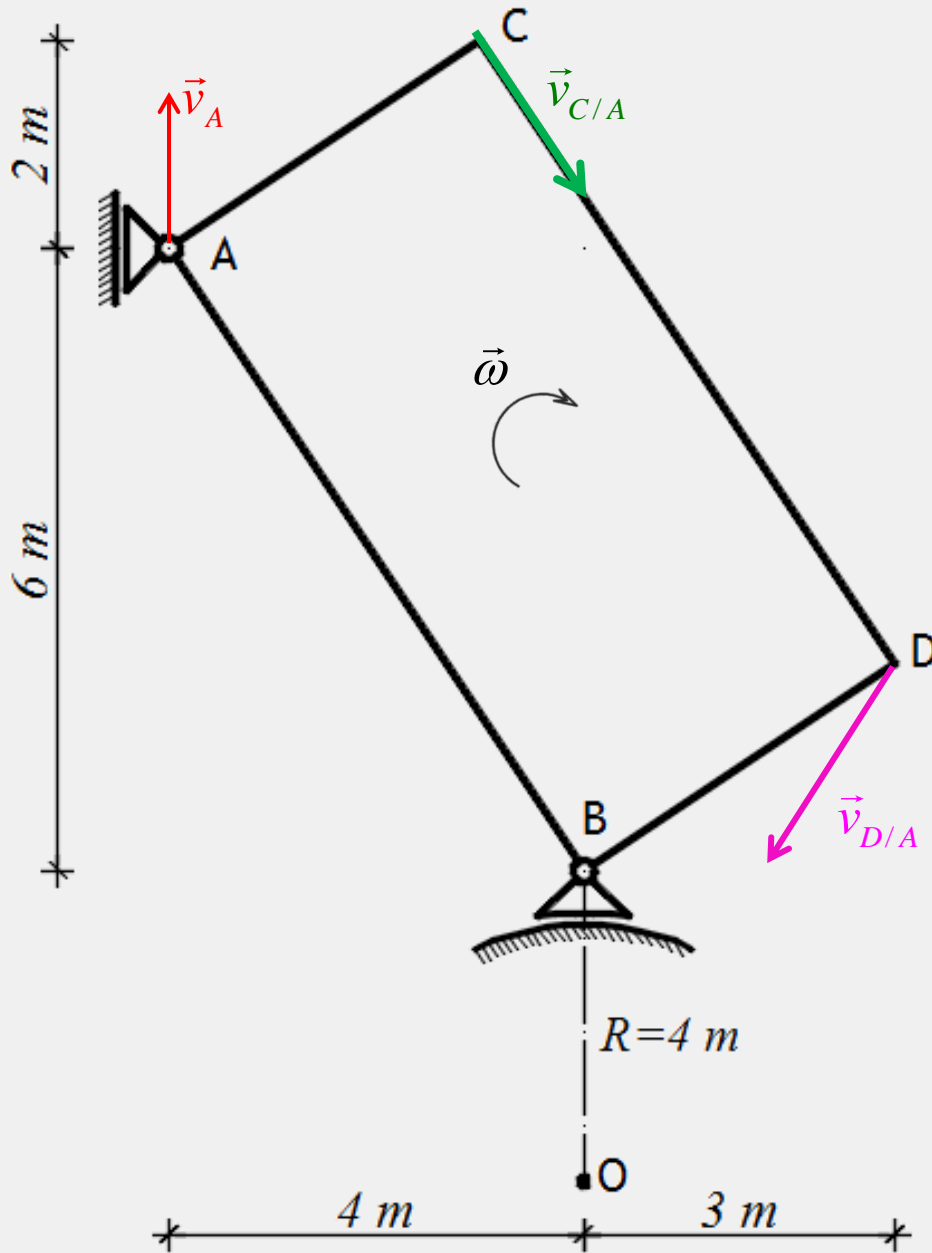
$$\vec{v}_D = \vec{v}_A + \vec{v}_{D/A}$$

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# BRZINE

## Brzina točke C



$$\vec{v}_C = \vec{v}_A + \vec{v}_{C/A}$$

$$\vec{v}_C = 4\vec{j} + 2\omega\vec{i} - 3\omega\vec{j}$$

$$\vec{v}_C = 2\vec{i} - \vec{j}$$

$$v_C = \sqrt{2^2 + 1^2} = 2,236 \text{ m/s}$$

## Brzina točke D

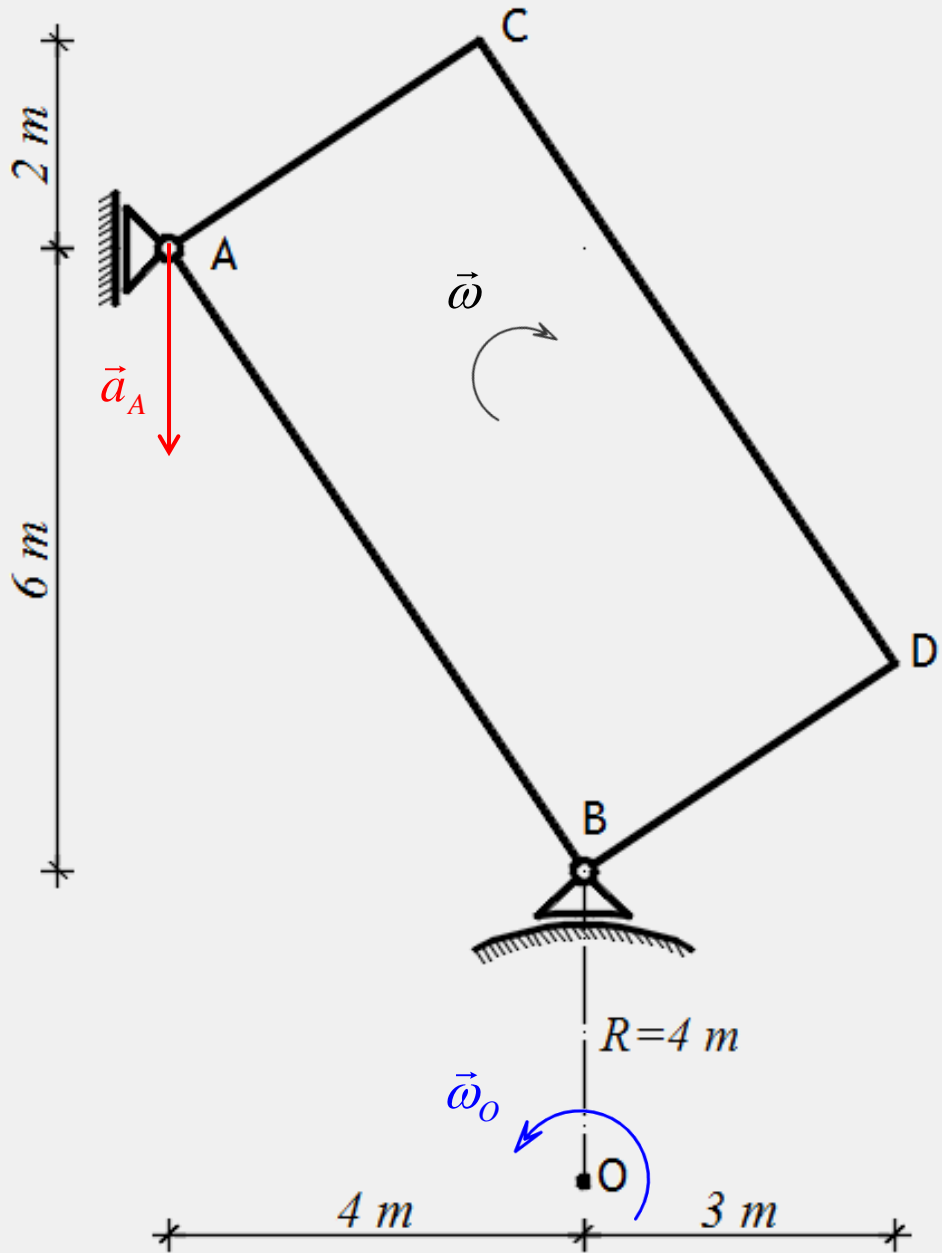
$$\vec{v}_D = \vec{v}_A + \vec{v}_{D/A}$$

$$\vec{v}_D = 4\vec{j} - 4\omega\vec{i} - 7\omega\vec{j}$$

$$\vec{v}_D = -4\vec{i} - 3\vec{j}$$

$$v_D = \sqrt{4^2 + 3^2} = 5 \text{ m/s}$$

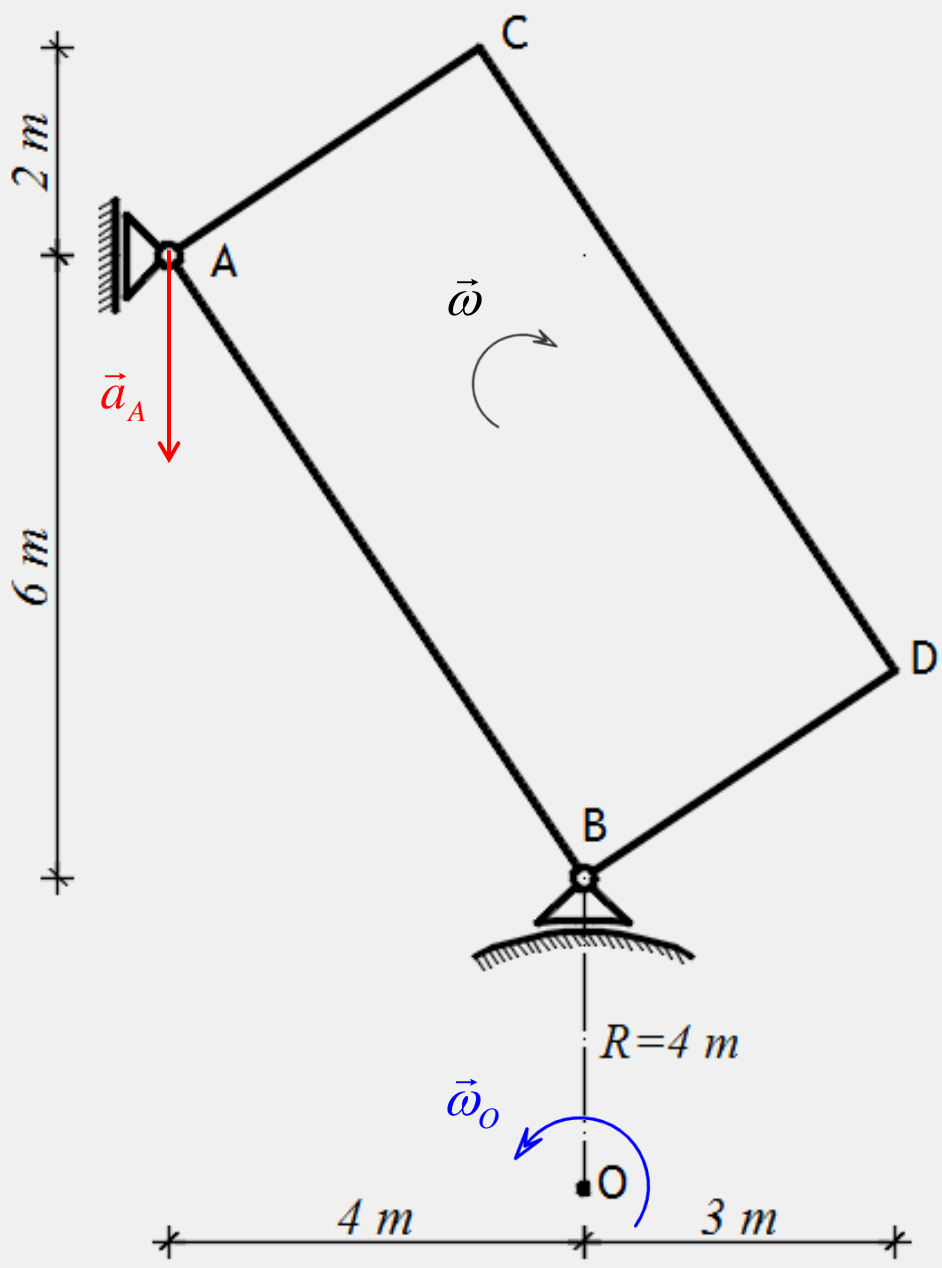
# UBRZANJA



# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_B = \vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T$$

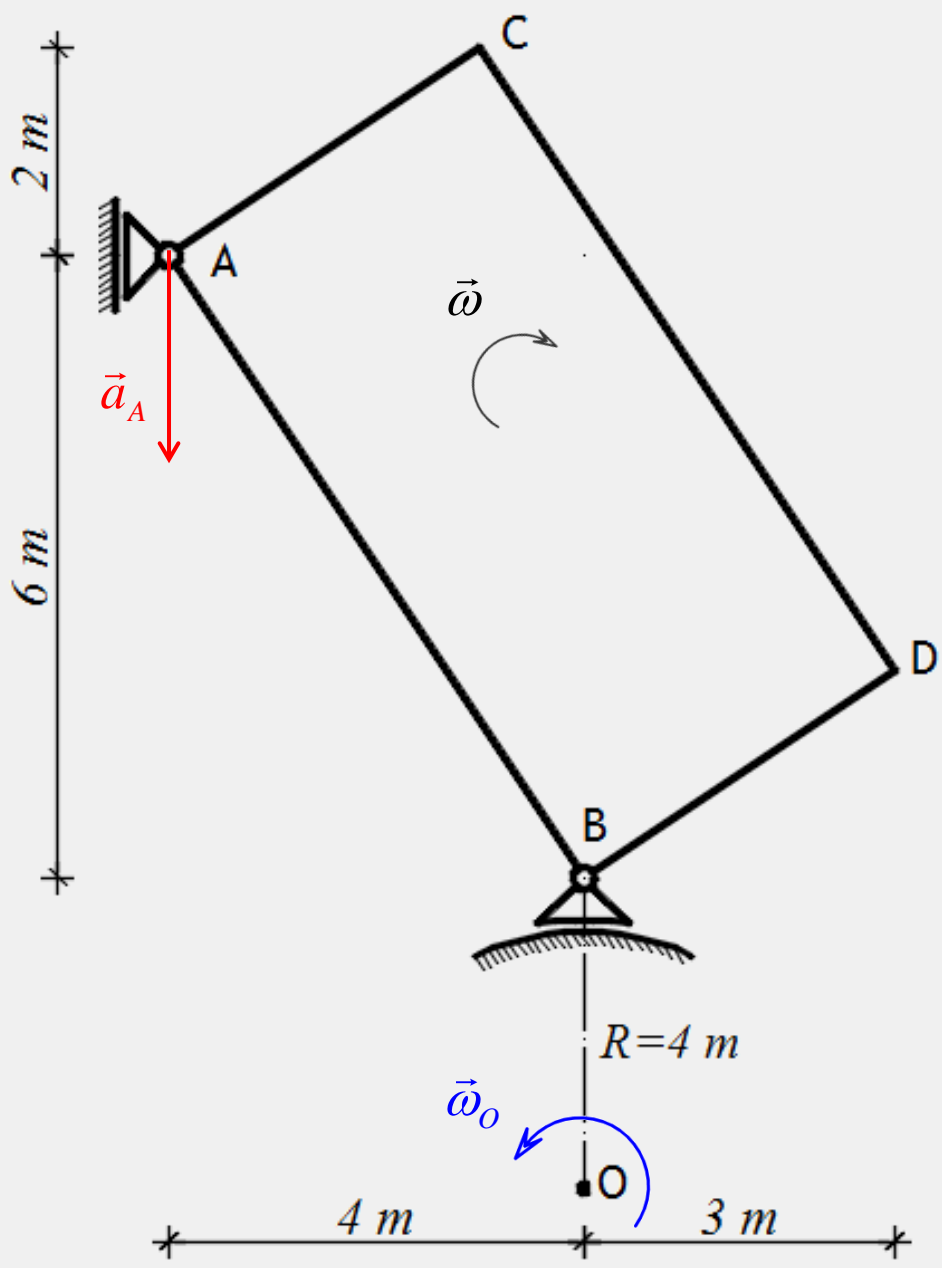


# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_B = \vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T$$

$$\vec{a}_{B/A}^N \parallel \overline{AB}$$

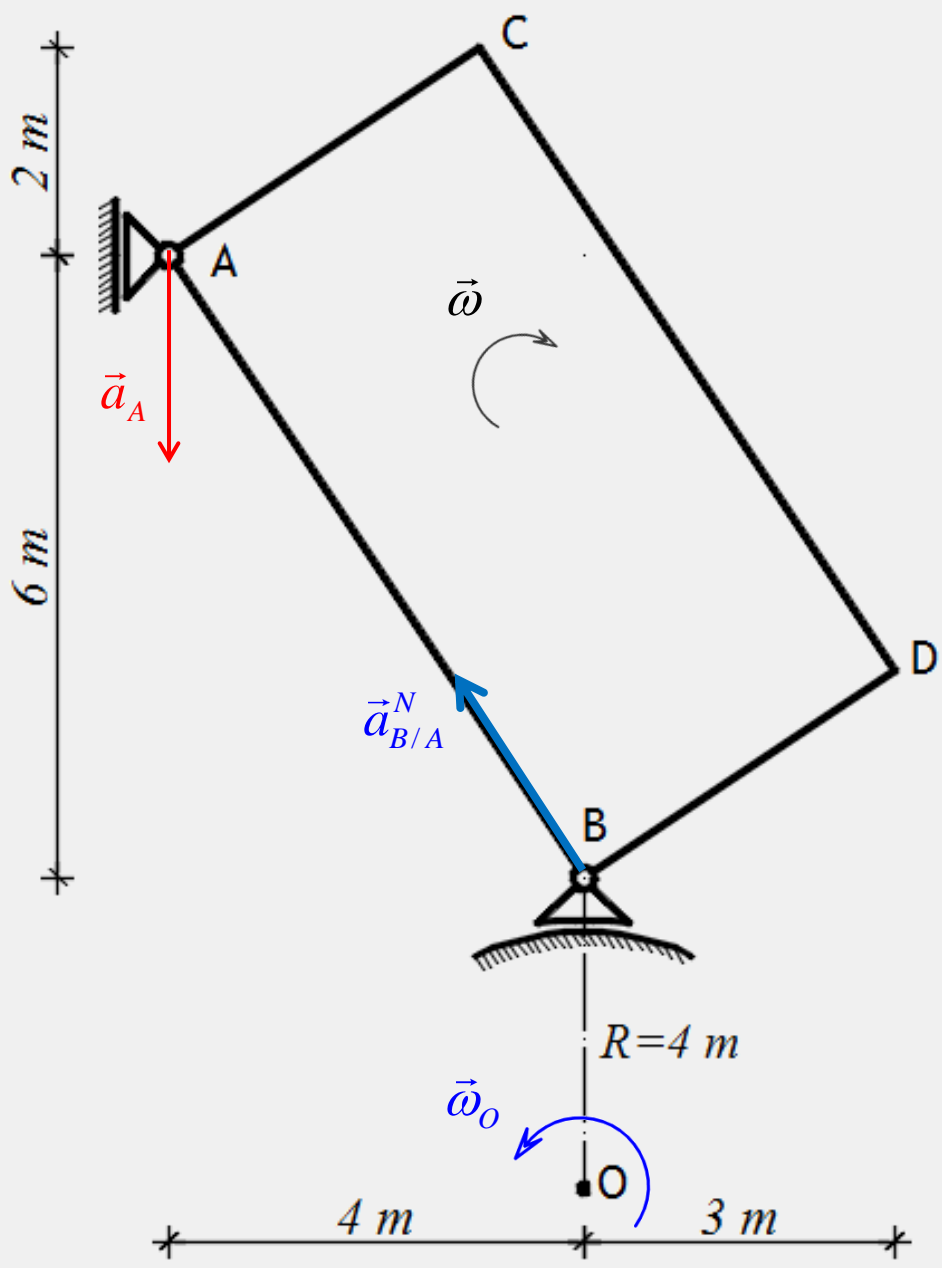


# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_B = \vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T$$

$$\vec{a}_{B/A}^N \parallel \overline{AB}$$

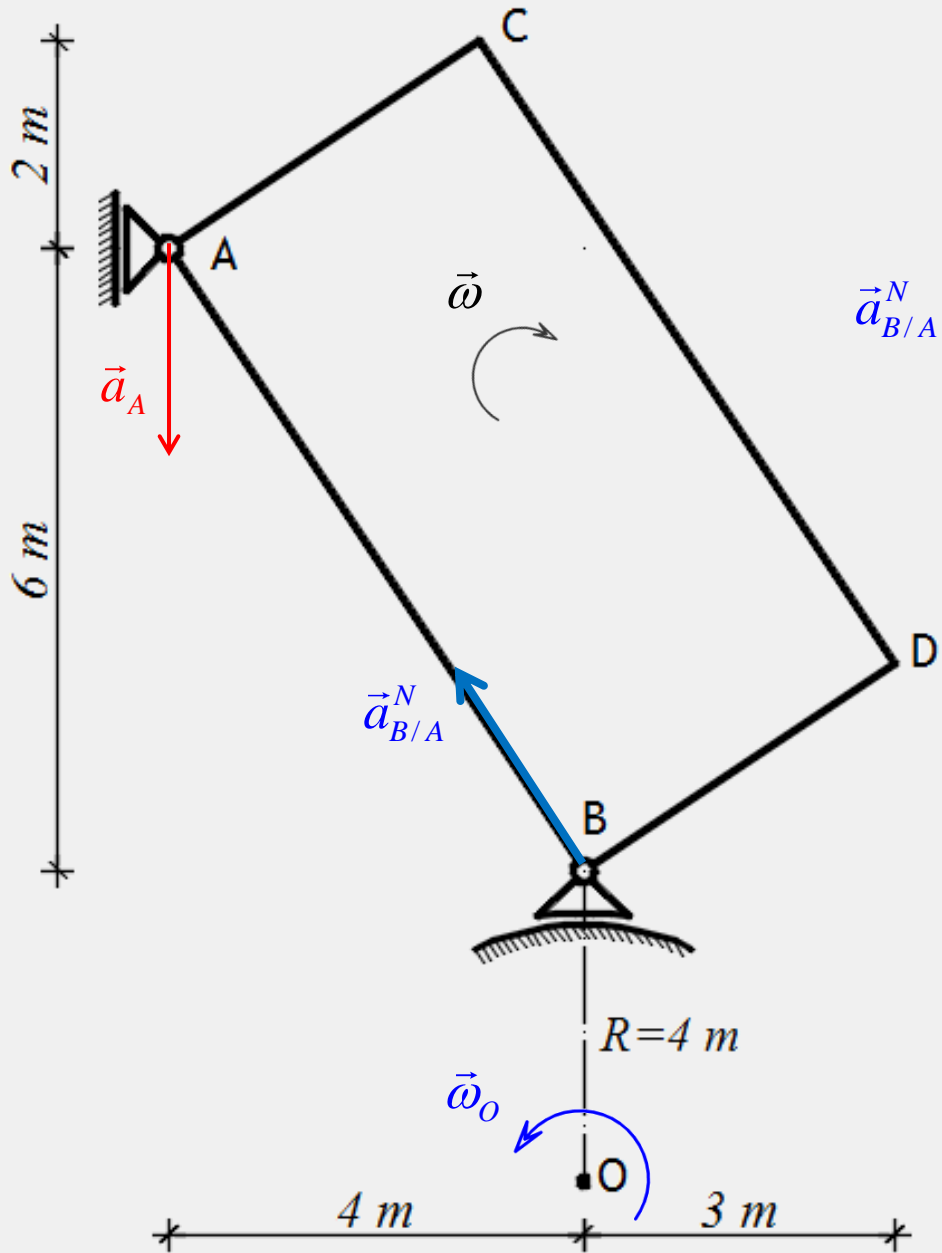


# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_B = \vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T$$

$$\vec{a}_{B/A}^N \parallel \overline{AB}$$



$$\vec{a}_{B/A}^N = -4\omega^2\vec{i} + 6\omega^2\vec{j} = -4\vec{i} + 6\vec{j}$$

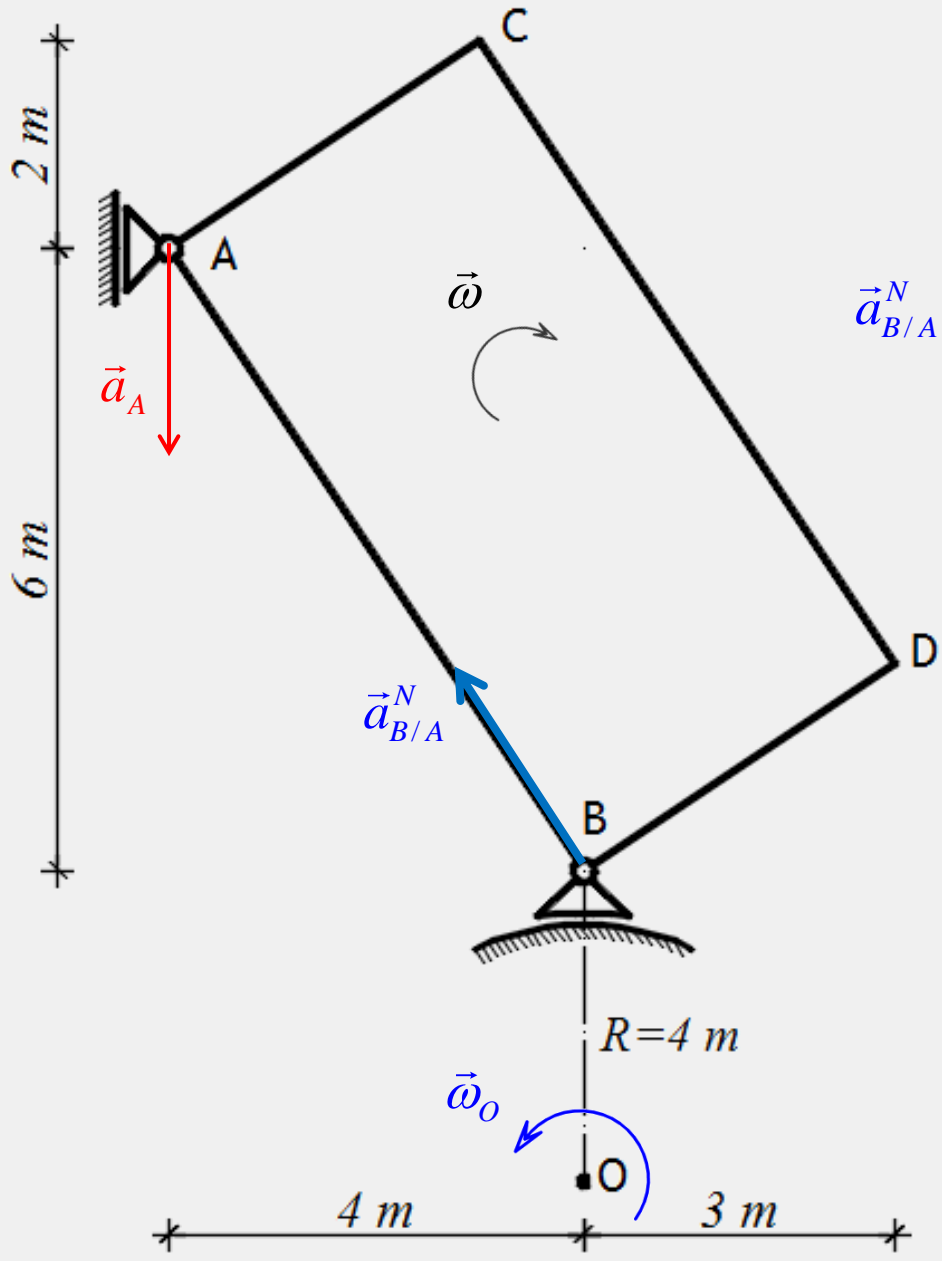
# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_B = \vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T$$

$$\vec{a}_{B/A}^N \parallel \overline{AB}$$

$$\vec{a}_{B/A}^T \perp \overline{AB}$$



$$\vec{a}_{B/A}^N = -4\omega^2\vec{i} + 6\omega^2\vec{j} = -4\vec{i} + 6\vec{j}$$



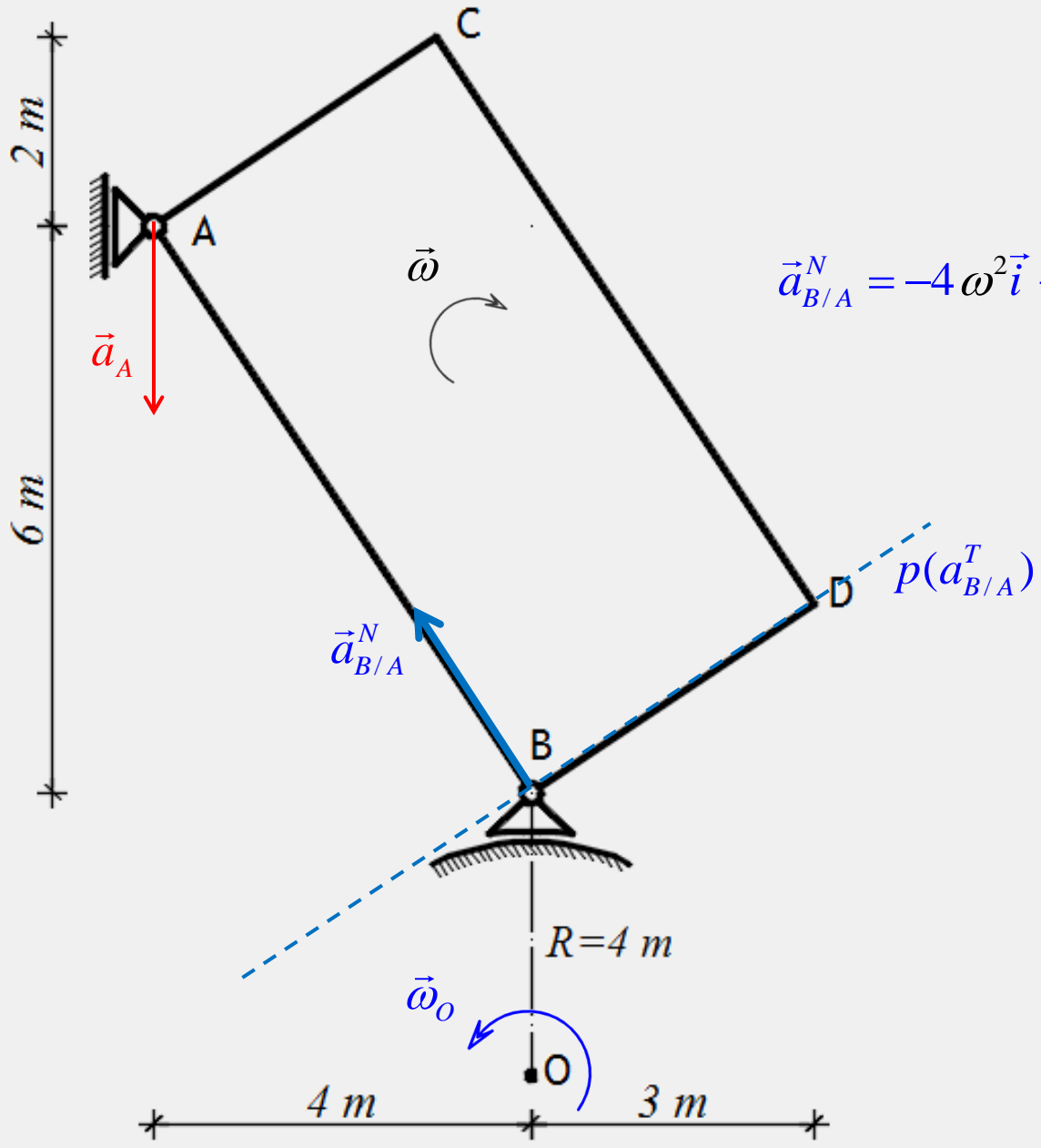
# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_B = \vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T$$

$$\vec{a}_{B/A}^N \parallel \overline{AB}$$

$$\vec{a}_{B/A}^T \perp \overline{AB}$$



$$\vec{a}_{B/A}^N = -4\omega^2\vec{i} + 6\omega^2\vec{j} = -4\vec{i} + 6\vec{j}$$

# UBRZANJA

## Ubrzanje točke B

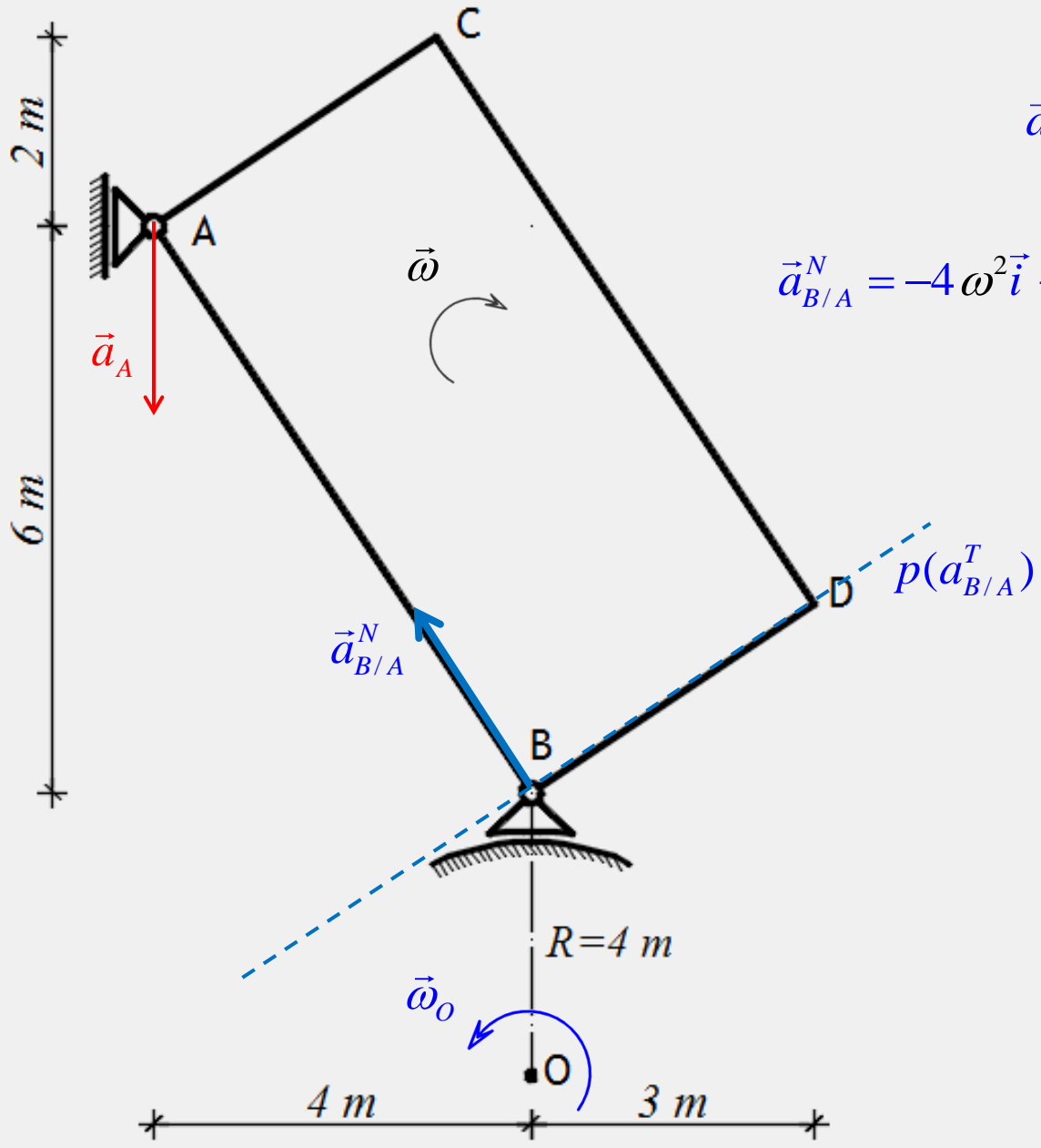
$$\vec{a}_B = \vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T$$

$$\vec{a}_{B/A}^N \parallel \overline{AB}$$

$$\vec{a}_{B/A}^T \perp \overline{AB}$$

$$\vec{a}_B = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

$$\vec{a}_{B/A}^N = -4\omega^2\vec{i} + 6\omega^2\vec{j} = -4\vec{i} + 6\vec{j}$$



# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_B = \vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T$$

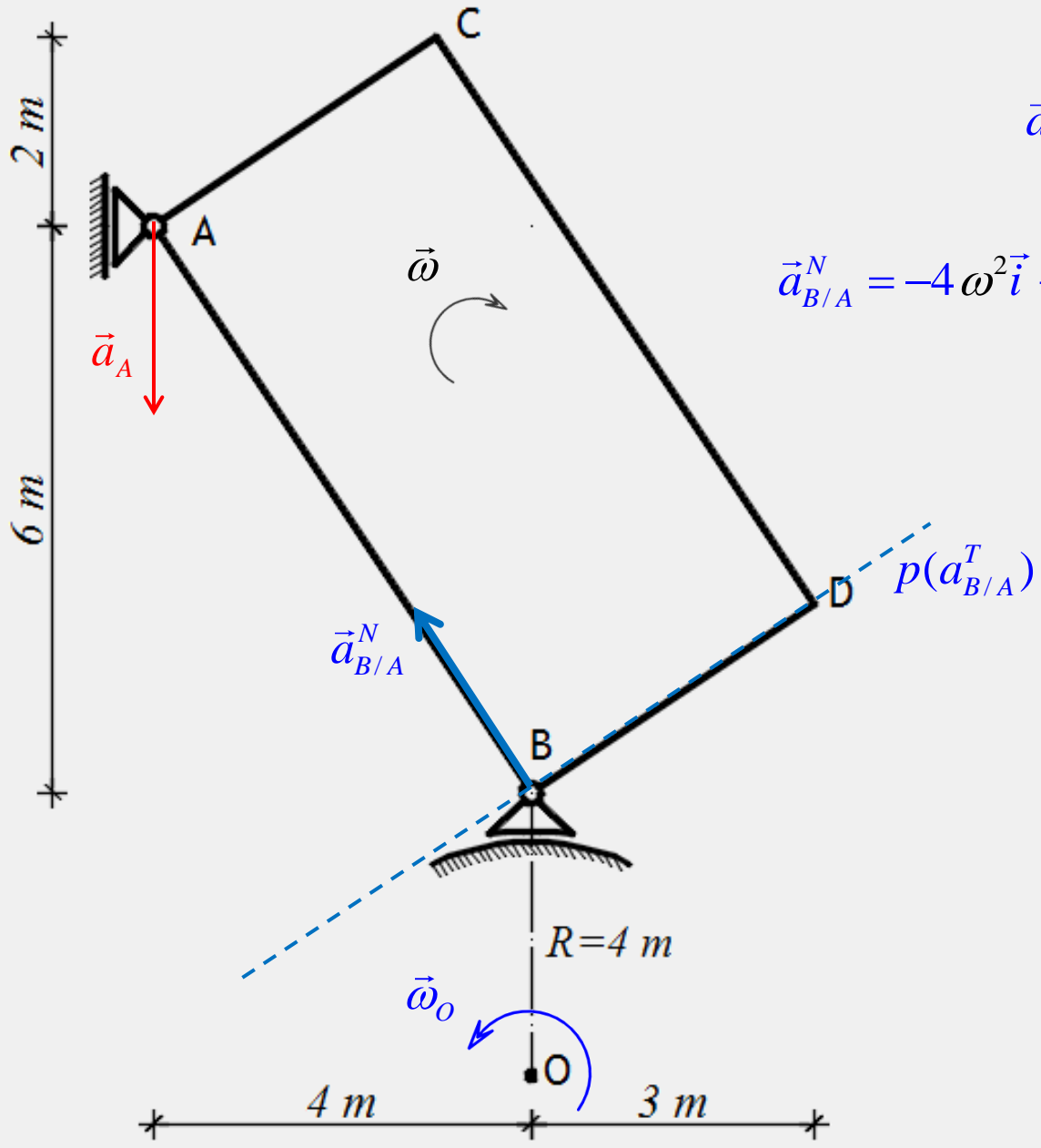
$$\vec{a}_{B/A}^N \parallel \overline{AB}$$

$$\vec{a}_{B/A}^T \perp \overline{AB}$$

$$\vec{a}_B = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

$$\vec{a}_{B/O}^N \parallel R$$

$$\vec{a}_{B/A}^N = -4\omega^2 \vec{i} + 6\omega^2 \vec{j} = -4\vec{i} + 6\vec{j}$$



# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_B = \vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T$$

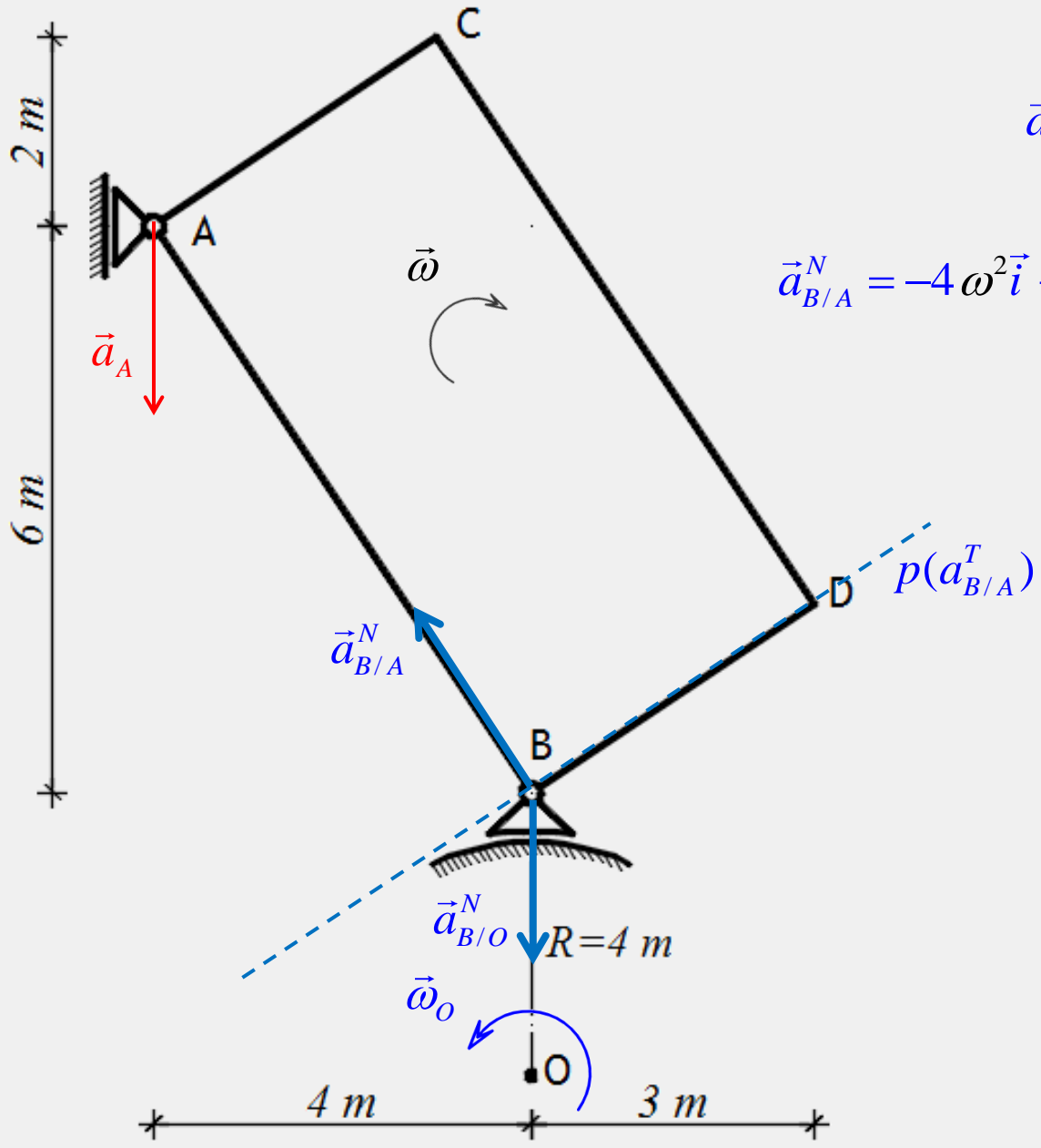
$$\vec{a}_{B/A}^N \parallel \overline{AB}$$

$$\vec{a}_{B/A}^T \perp \overline{AB}$$

$$\vec{a}_B = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

$$\vec{a}_{B/O}^N \parallel R$$

$$\vec{a}_{B/A}^N = -4\omega^2\vec{i} + 6\omega^2\vec{j} = -4\vec{i} + 6\vec{j}$$



# UBRZANJA

## Ubrzanje točke B

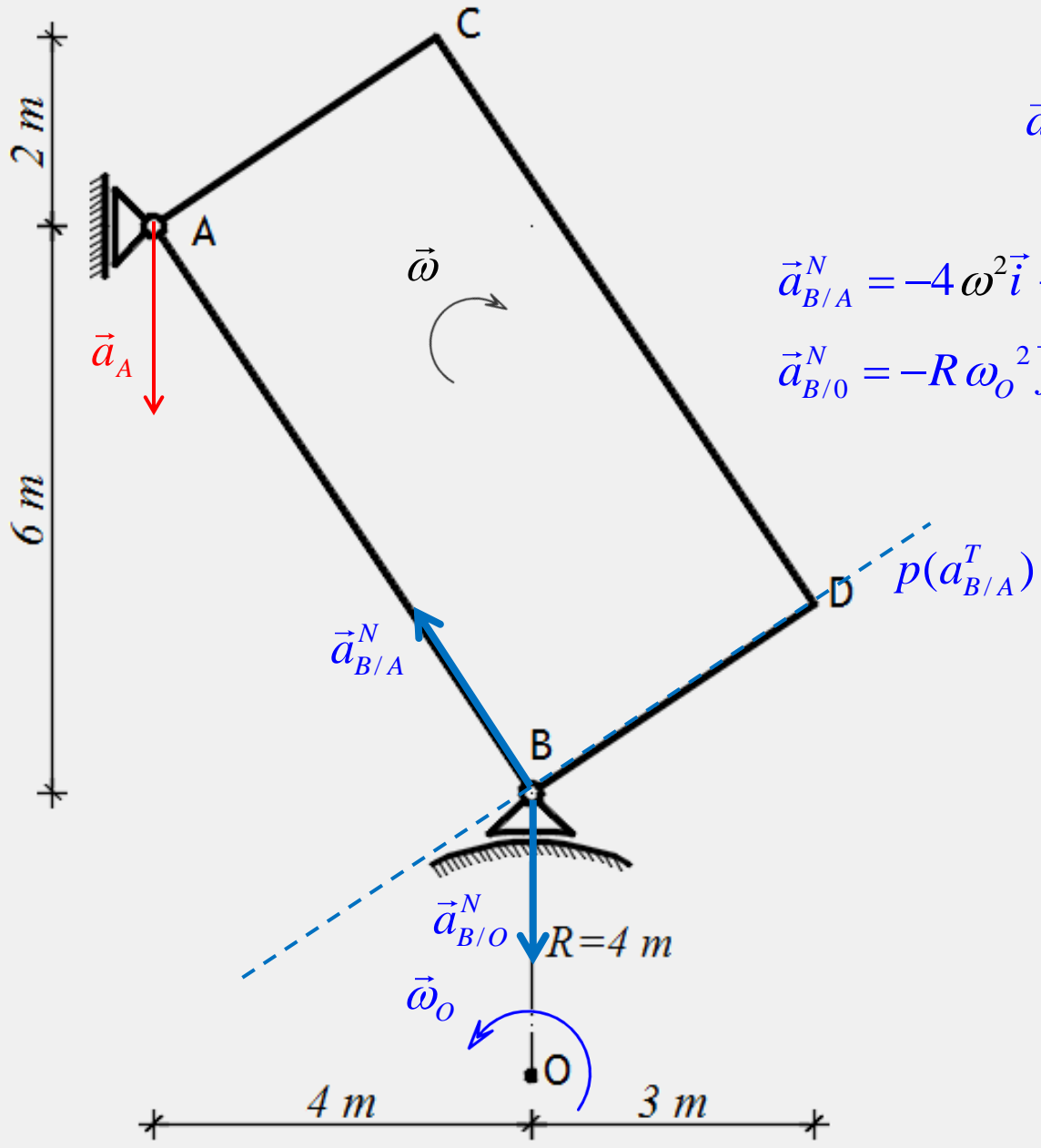
$$\vec{a}_B = \vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T$$

$$\vec{a}_{B/A}^N \parallel \overline{AB}$$

$$\vec{a}_{B/A}^T \perp \overline{AB}$$

$$\vec{a}_B = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

$$\vec{a}_{B/O}^N \parallel R$$



$$\vec{a}_{B/A}^N = -4\omega^2\vec{i} + 6\omega^2\vec{j} = -4\vec{i} + 6\vec{j}$$

$$\vec{a}_{B/O}^N = -R\omega_o^2\vec{j} = -9\vec{j}$$

# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_B = \vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T$$

$$\vec{a}_{B/A}^N \parallel \overline{AB}$$

$$\vec{a}_{B/A}^T \perp \overline{AB}$$

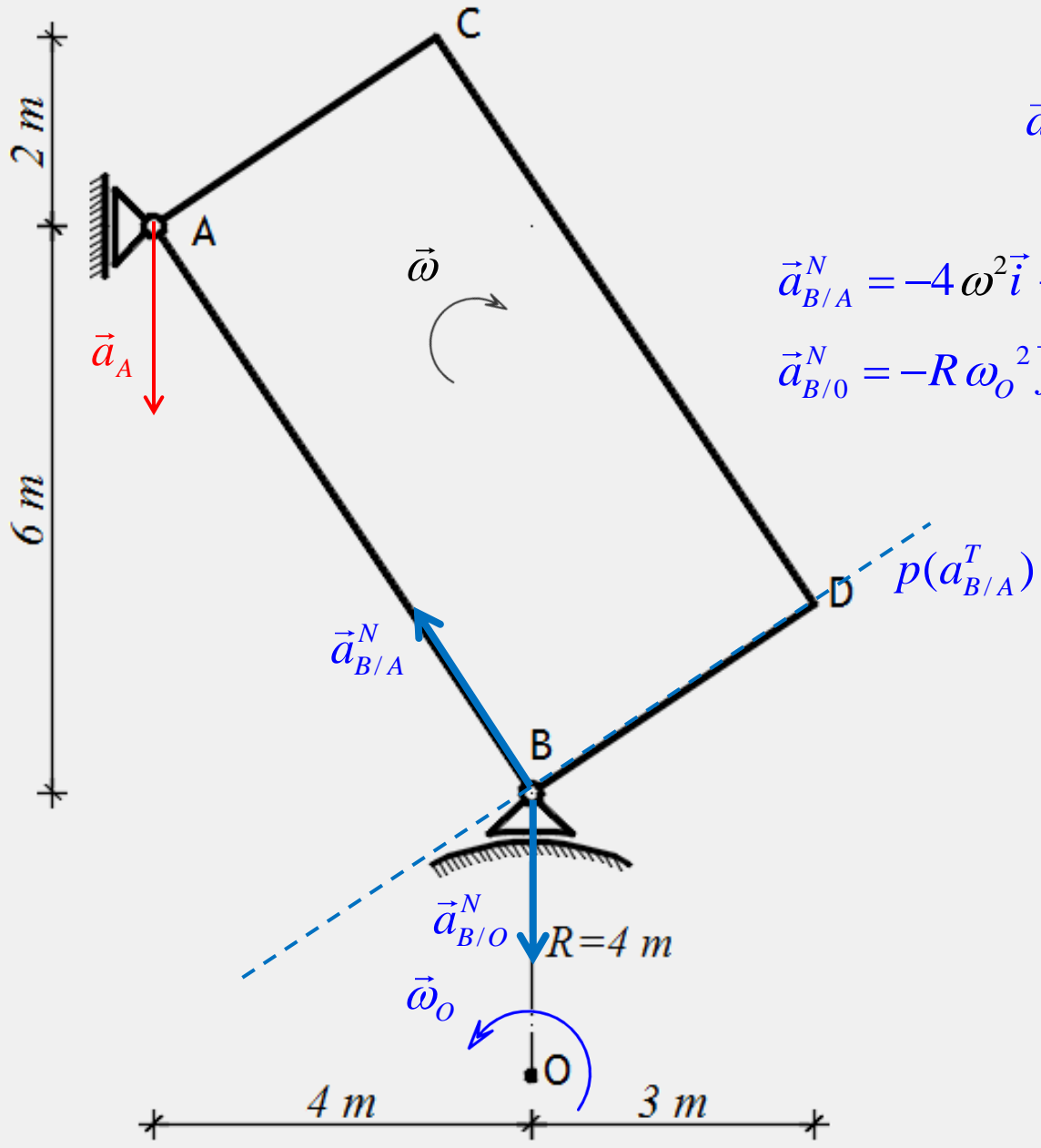
$$\vec{a}_B = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

$$\vec{a}_{B/O}^N \parallel R$$

$$\vec{a}_{B/O}^T \perp R$$

$$\vec{a}_{B/A}^N = -4\omega^2 \vec{i} + 6\omega^2 \vec{j} = -4\vec{i} + 6\vec{j}$$

$$\vec{a}_{B/O}^N = -R\omega_o^2 \vec{j} = -9\vec{j}$$



# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_B = \vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T$$

$$\vec{a}_{B/A}^N \parallel \overline{AB}$$

$$\vec{a}_{B/A}^T \perp \overline{AB}$$

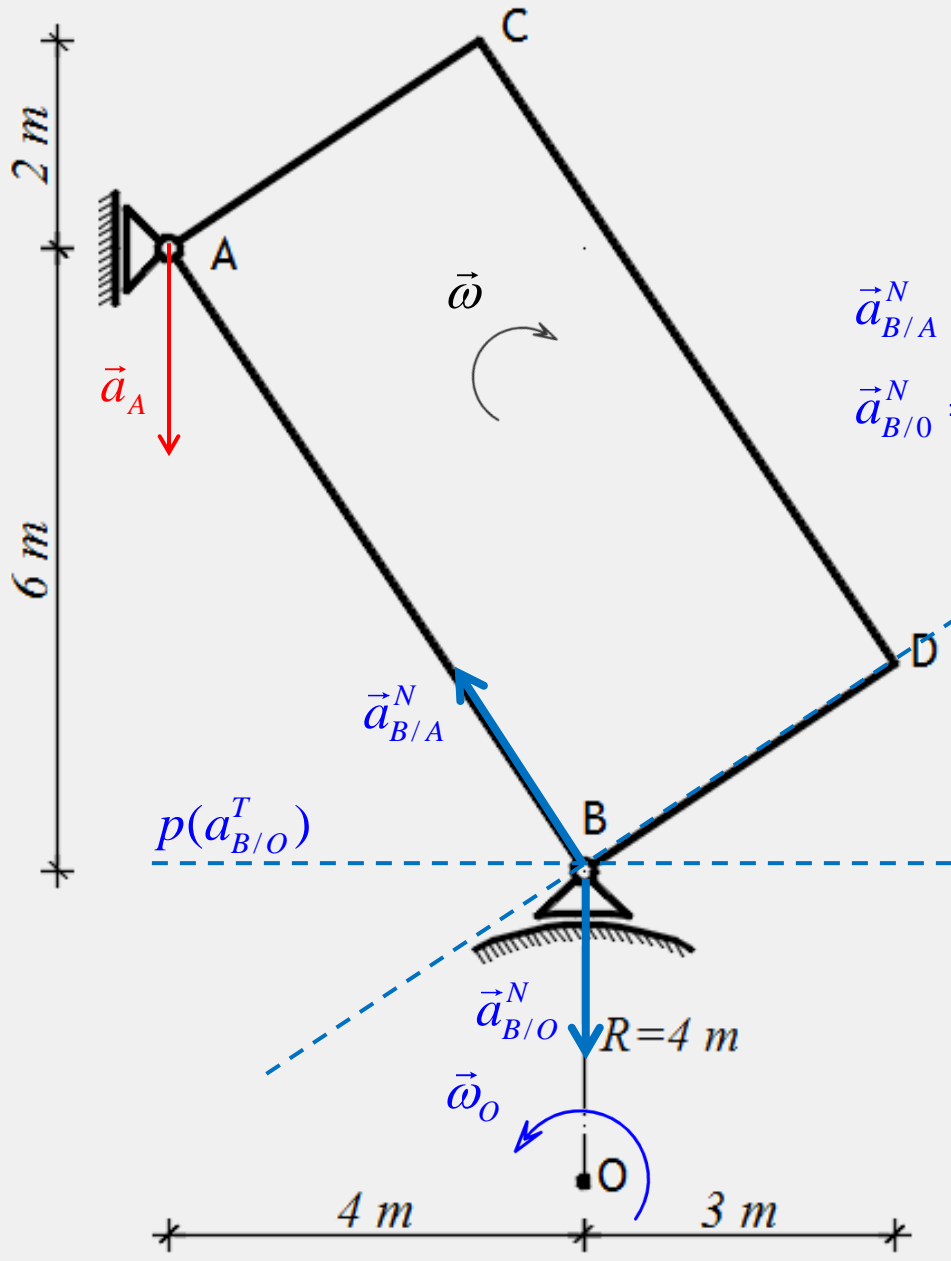
$$\vec{a}_B = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

$$\vec{a}_{B/O}^N \parallel R$$

$$\vec{a}_{B/O}^T \perp R$$

$$\vec{a}_{B/A}^N = -4\omega^2 \vec{i} + 6\omega^2 \vec{j} = -4\vec{i} + 6\vec{j}$$

$$\vec{a}_{B/O}^N = -R\omega_o^2 \vec{j} = -9\vec{j}$$



# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_B = \vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T$$

$$\vec{a}_{B/A}^N \parallel \overline{AB}$$

$$\vec{a}_{B/A}^T \perp \overline{AB}$$

$$\vec{a}_B = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

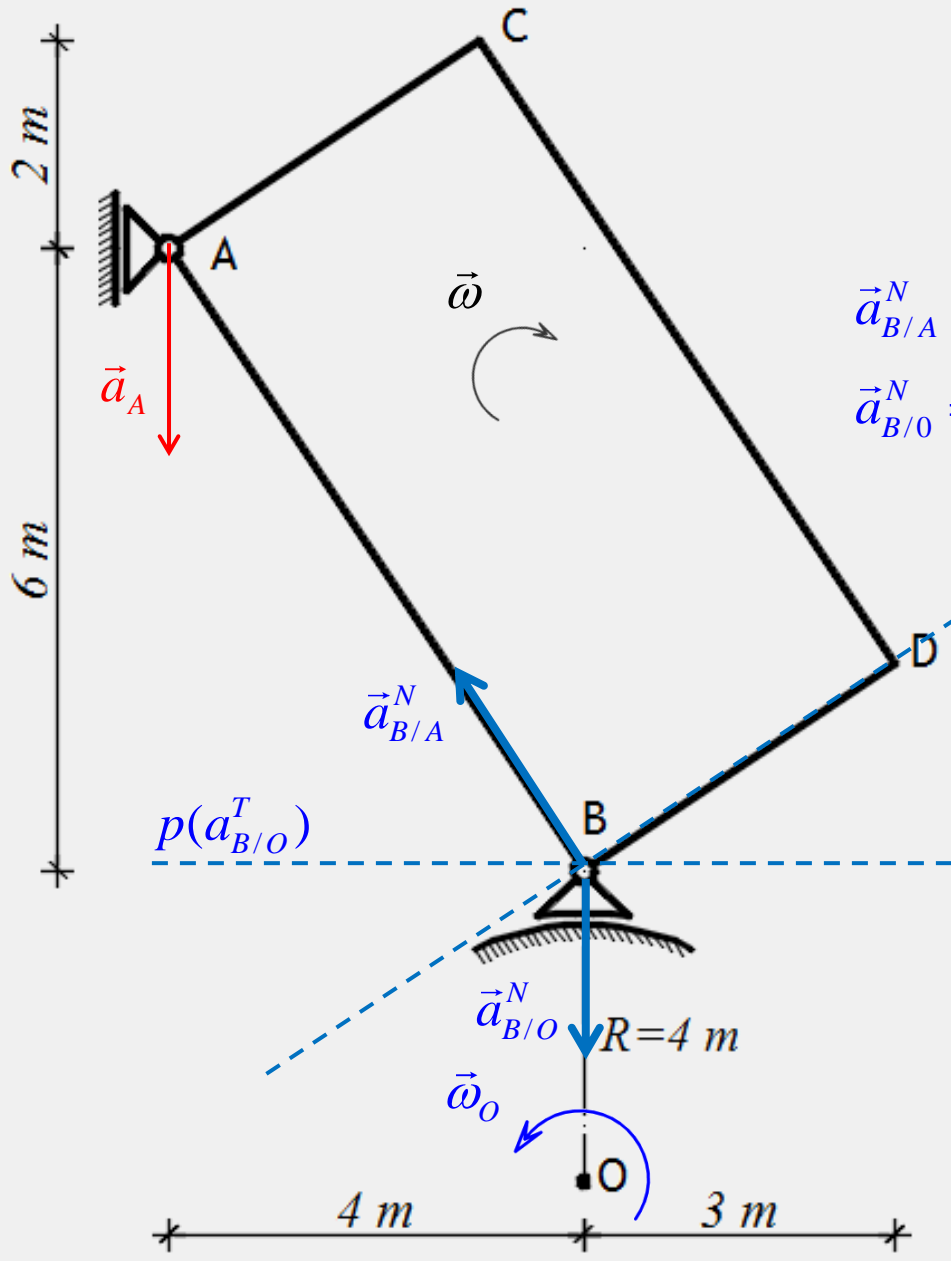
$$\vec{a}_{B/O}^N \parallel R$$

$$\vec{a}_{B/O}^T \perp R$$

$$\vec{a}_{B/A}^N = -4\omega^2 \vec{i} + 6\omega^2 \vec{j} = -4\vec{i} + 6\vec{j}$$

$$\vec{a}_{B/O}^N = -R\omega_o^2 \vec{j} = -9\vec{j}$$

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

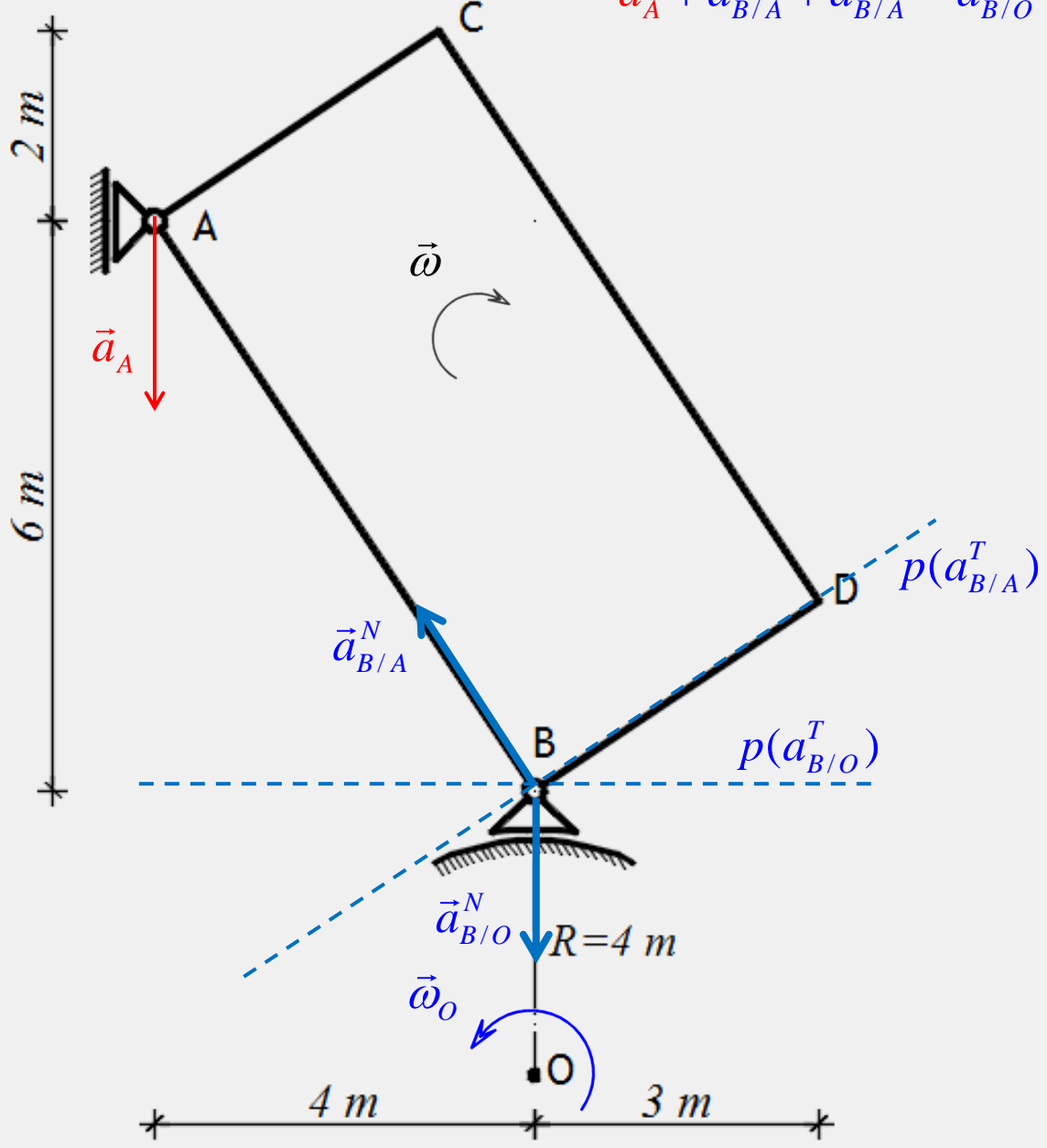




# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

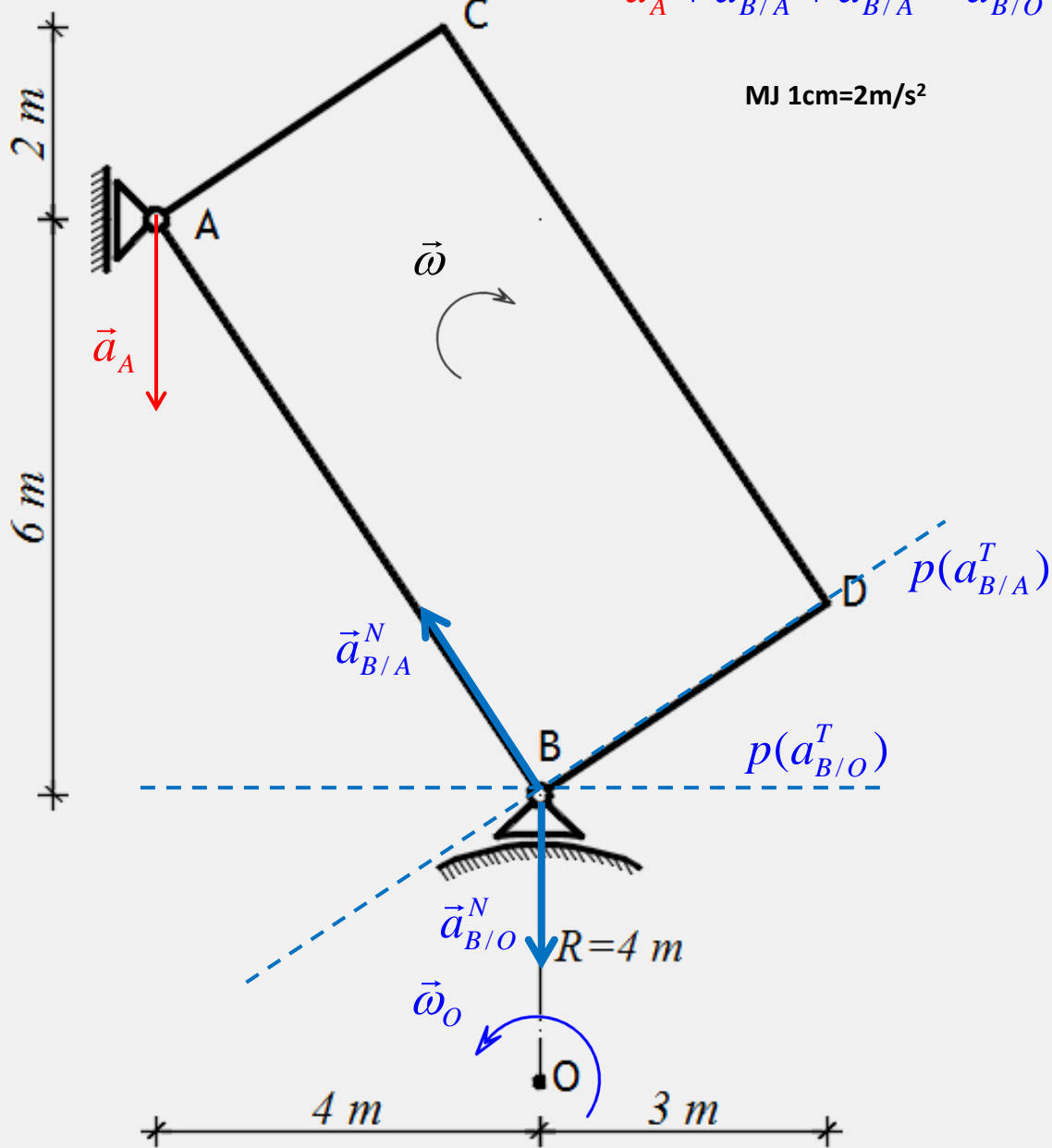


# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>

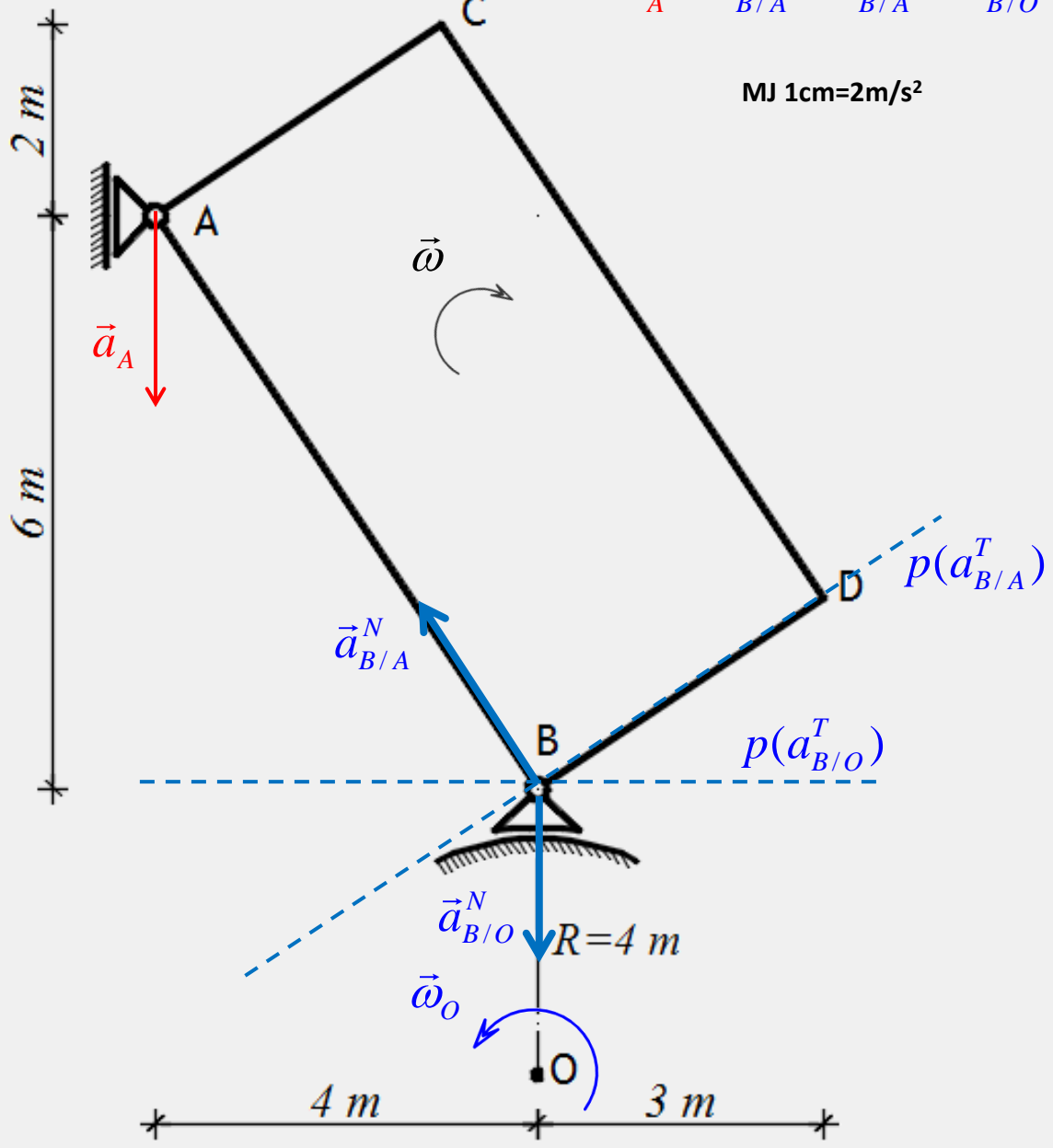


# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>

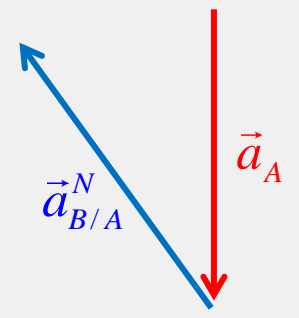
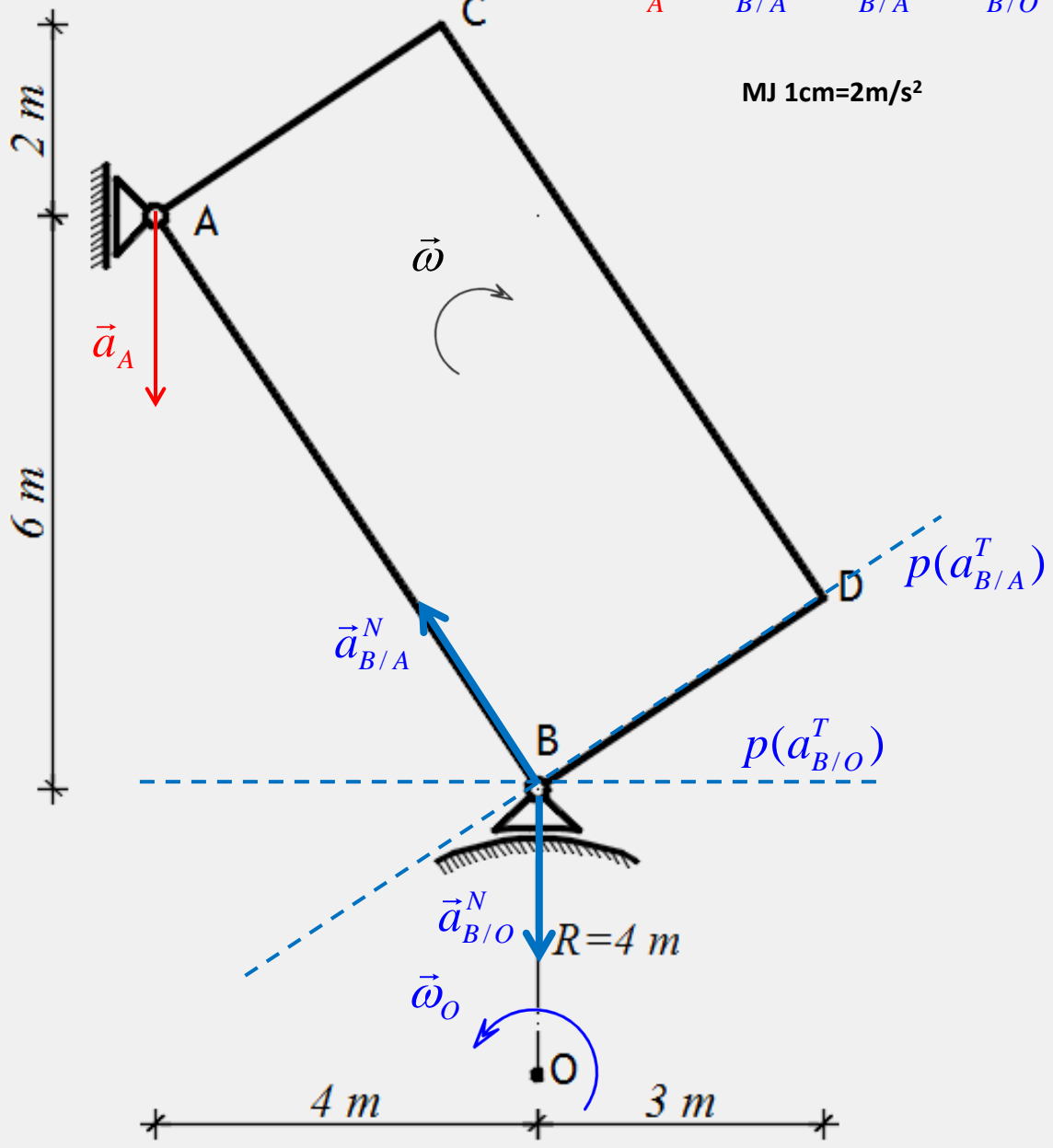


# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>

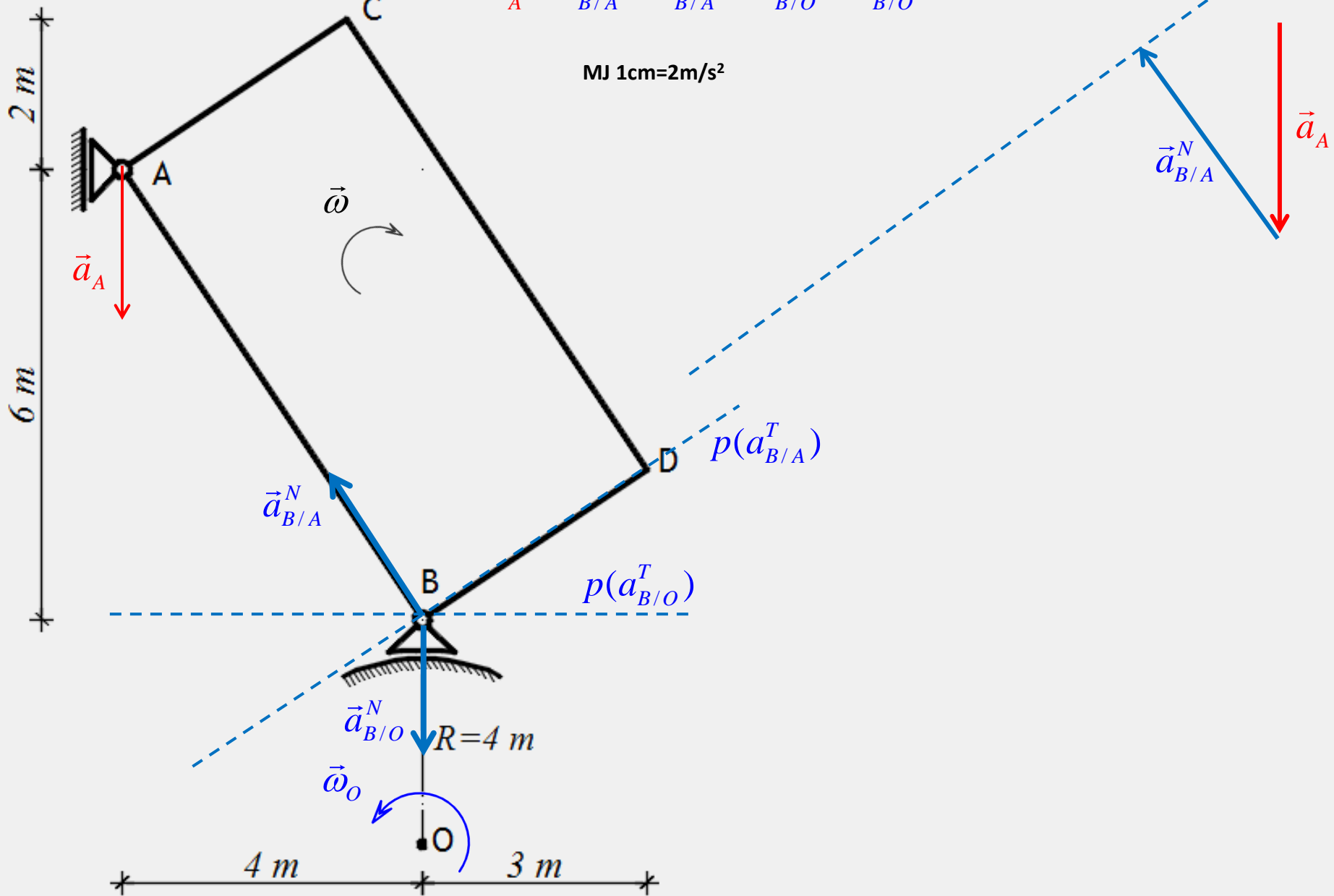


# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



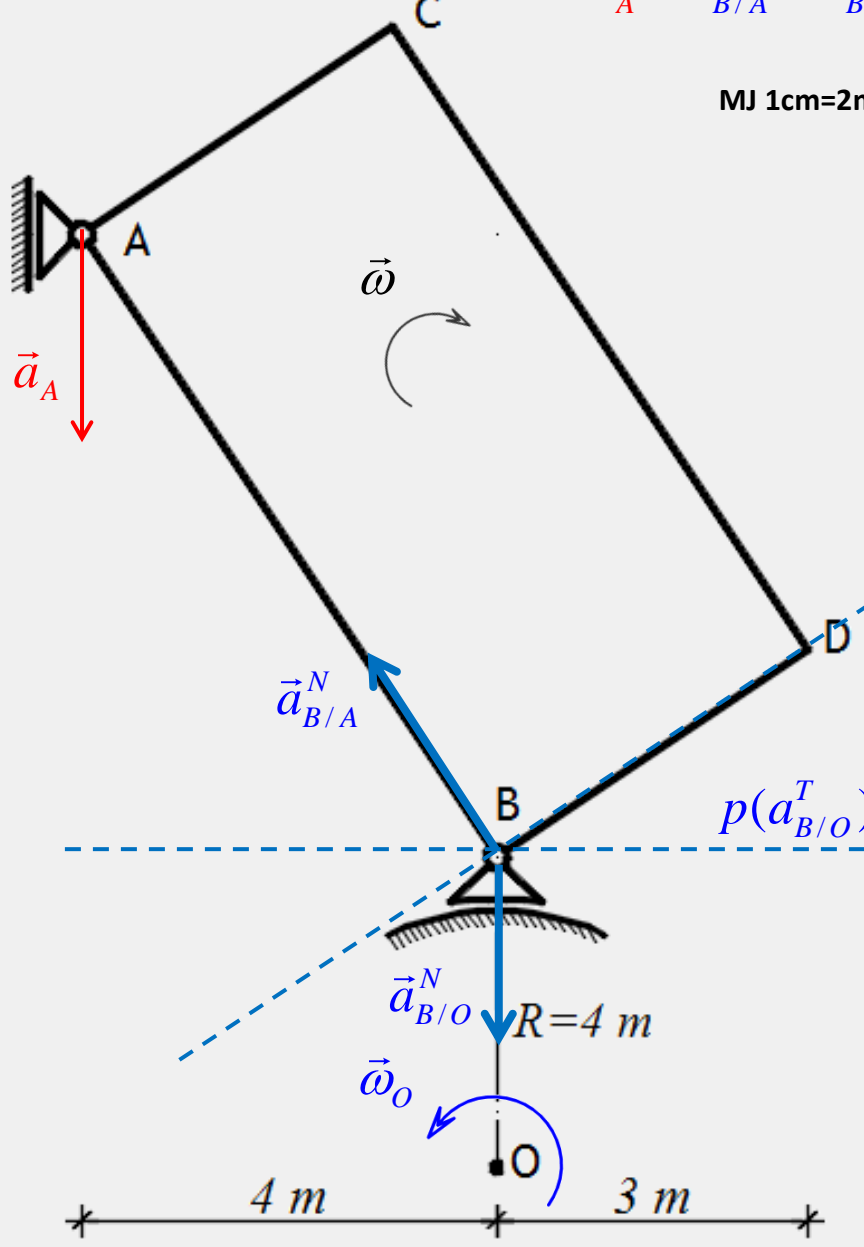
# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>

2 m  
6 m



$p(a_{B/A}^T)$

$\vec{a}_{B/A}^N$

$\vec{a}_A$

$\vec{a}_{B/O}^N$

$\vec{a}_{B/A}^N$

$p(a_{B/A}^T)$

$p(a_{B/O}^T)$

$\vec{a}_{B/O}^N$

$R=4\text{ m}$

$\vec{\omega}_O$

4 m

3 m

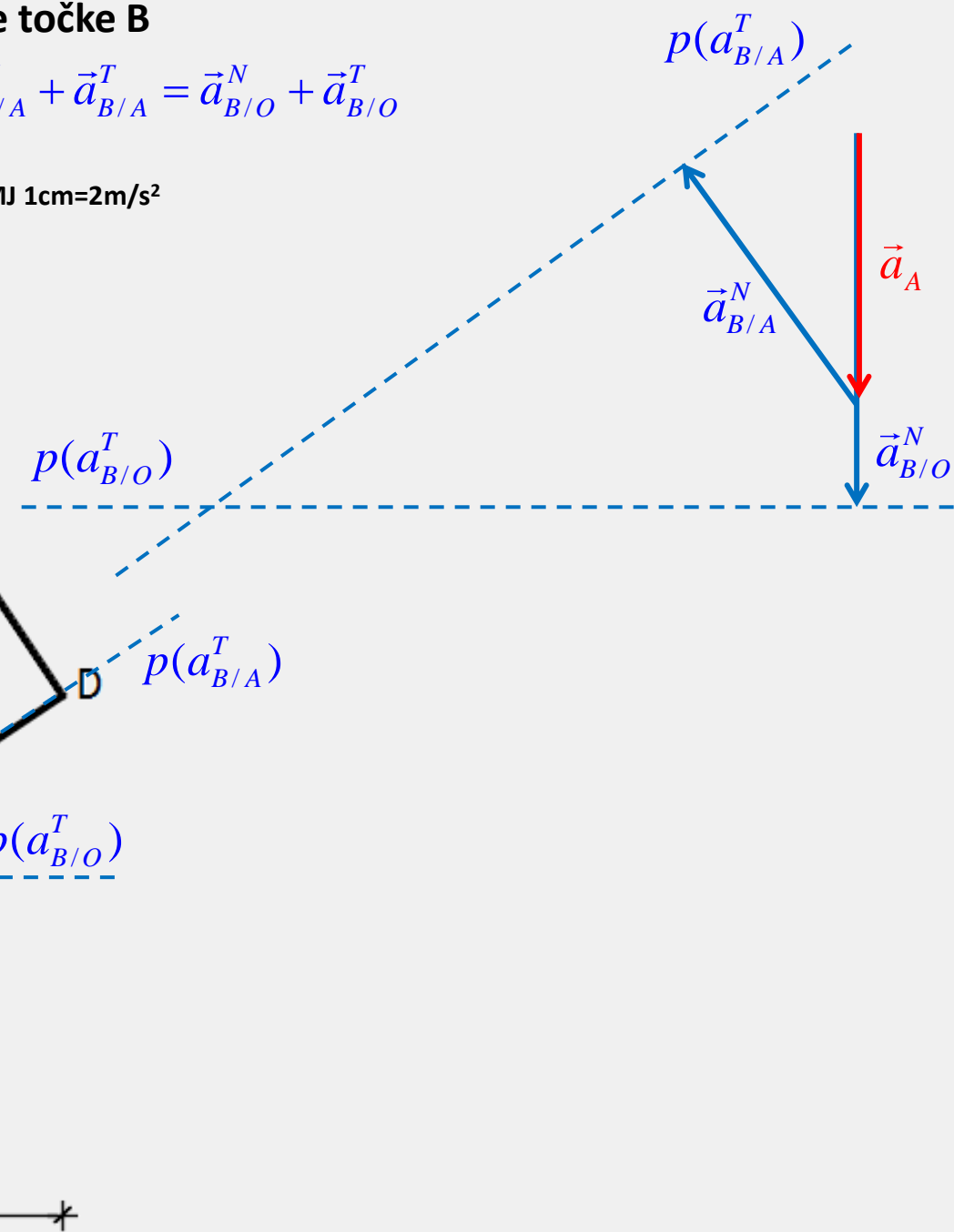
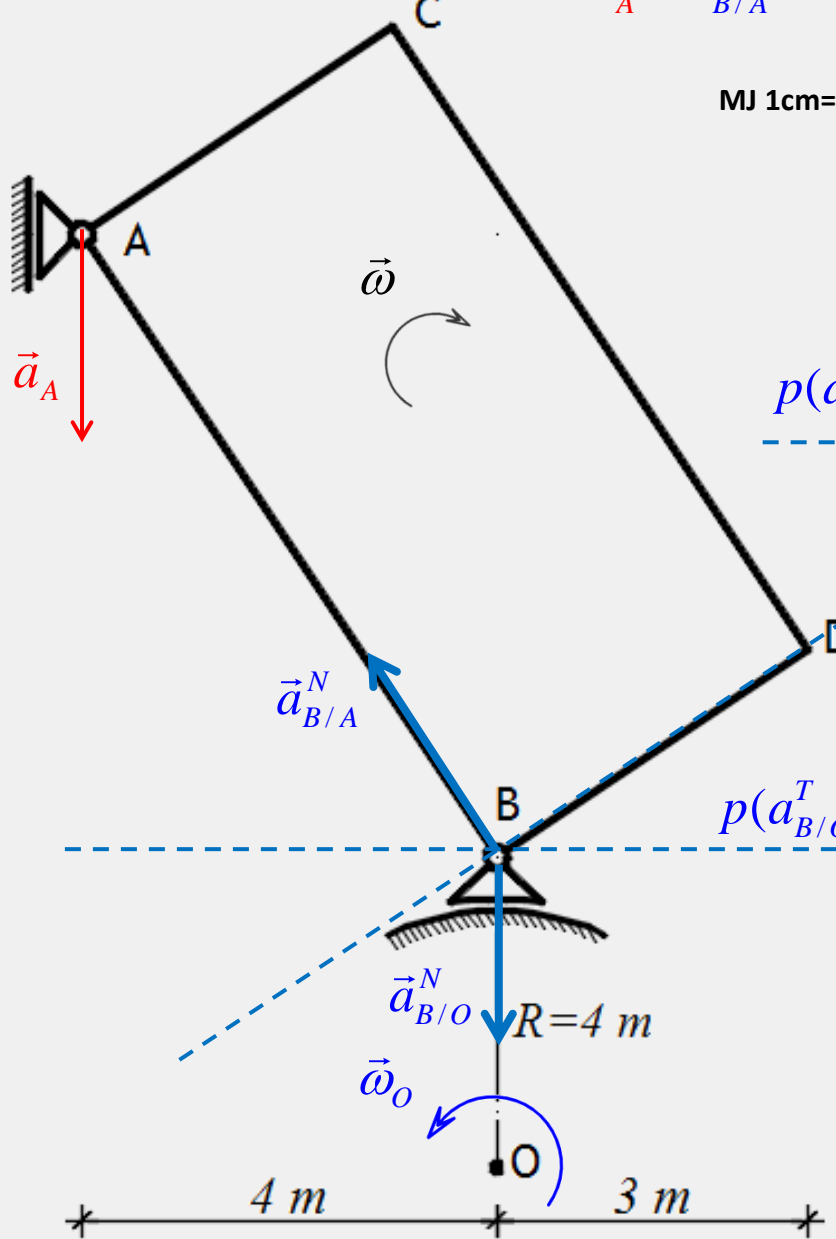
# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>

2 m  
6 m

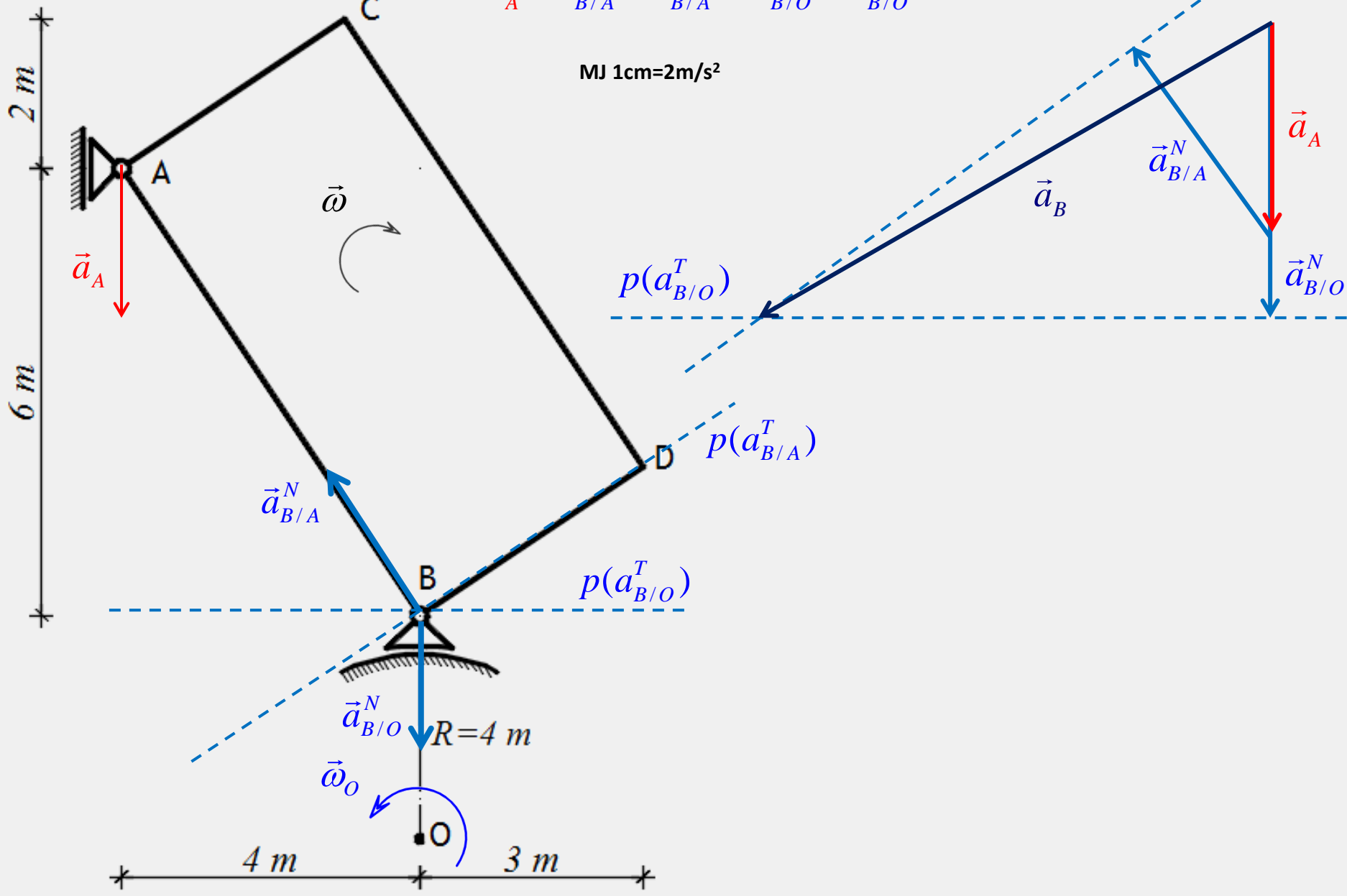


# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



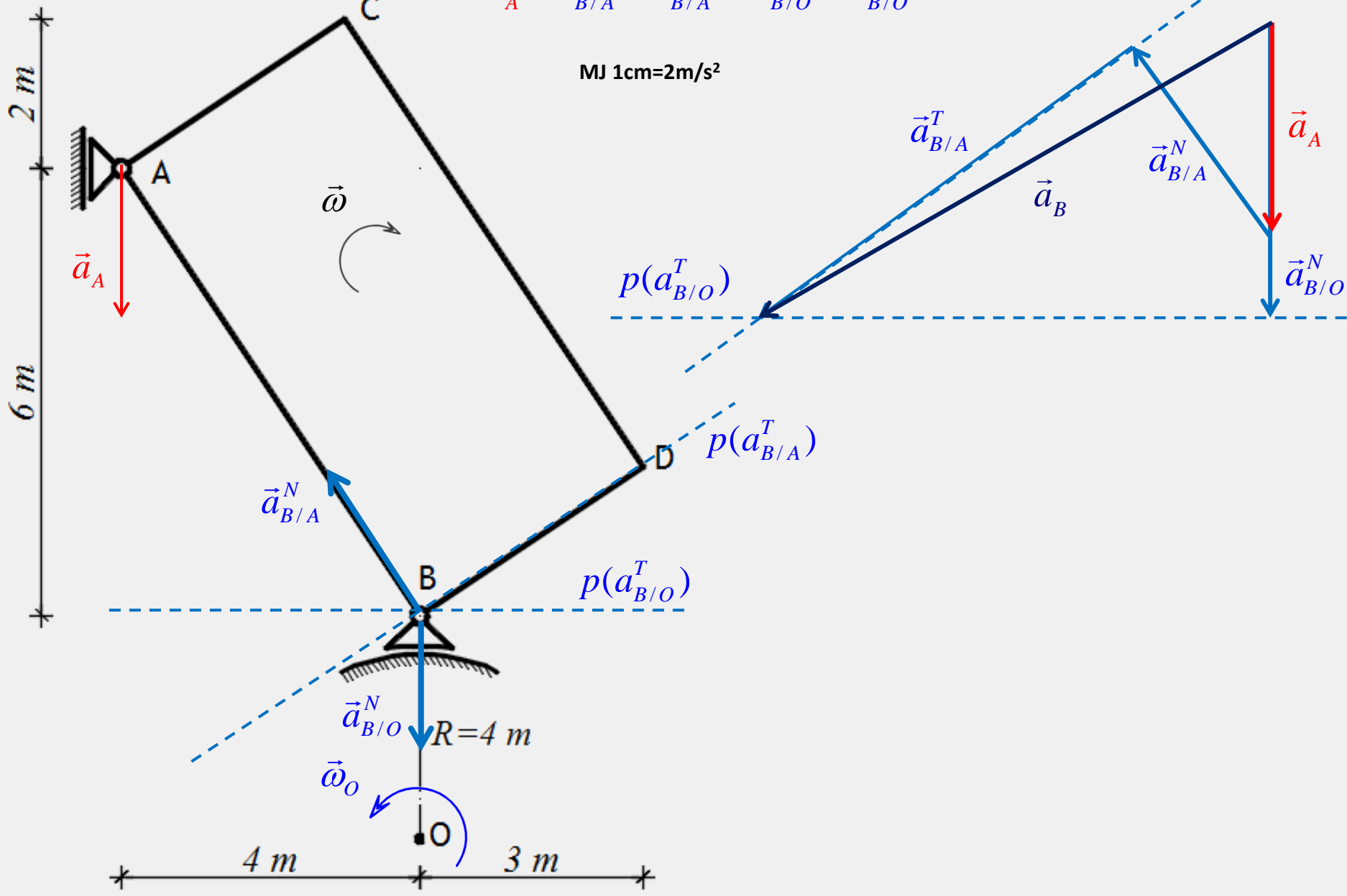


# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>

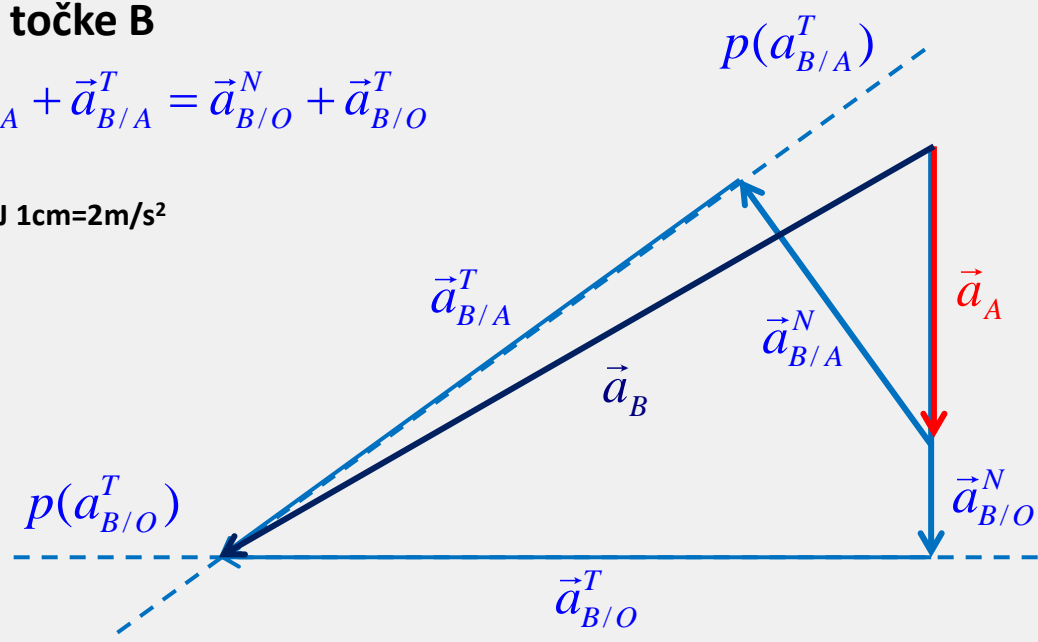
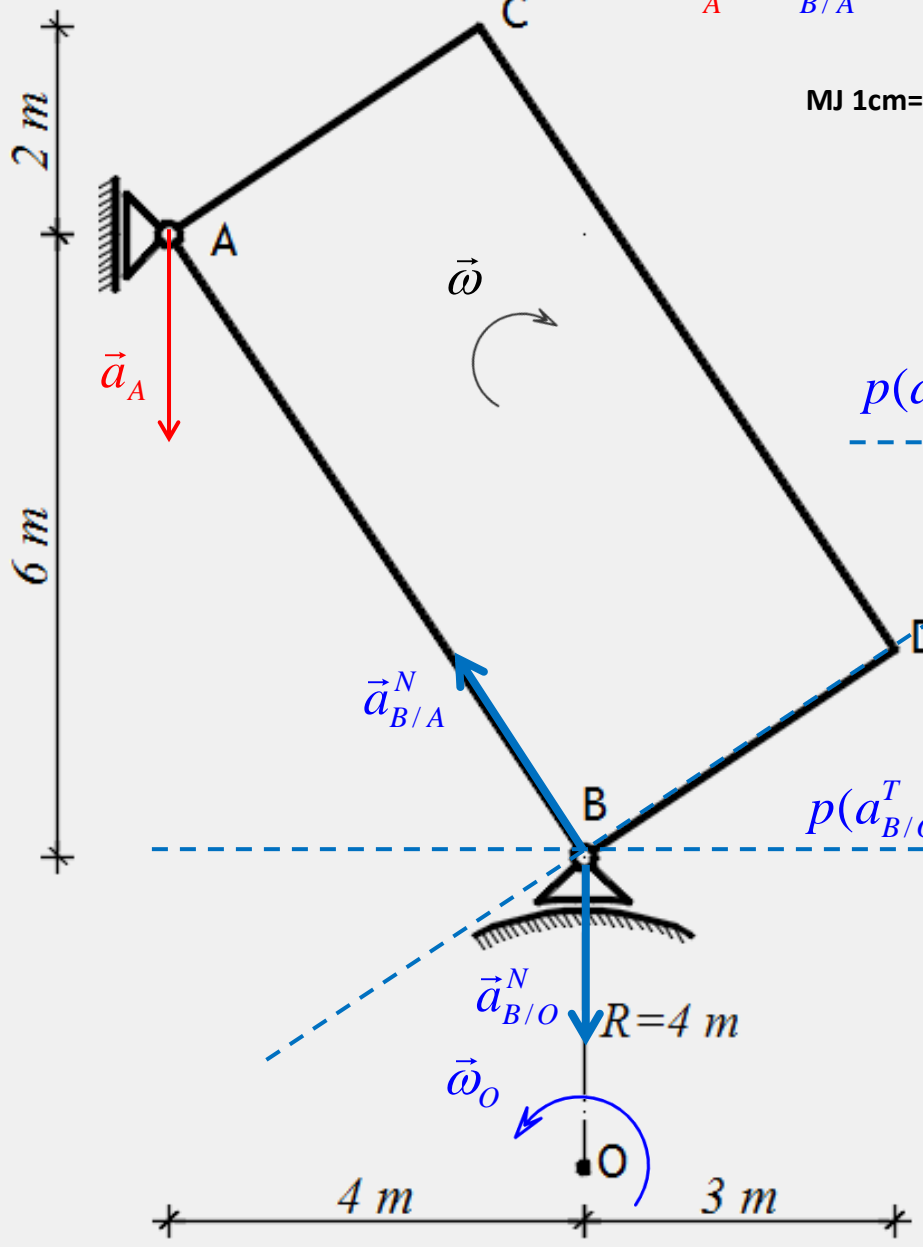


# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>

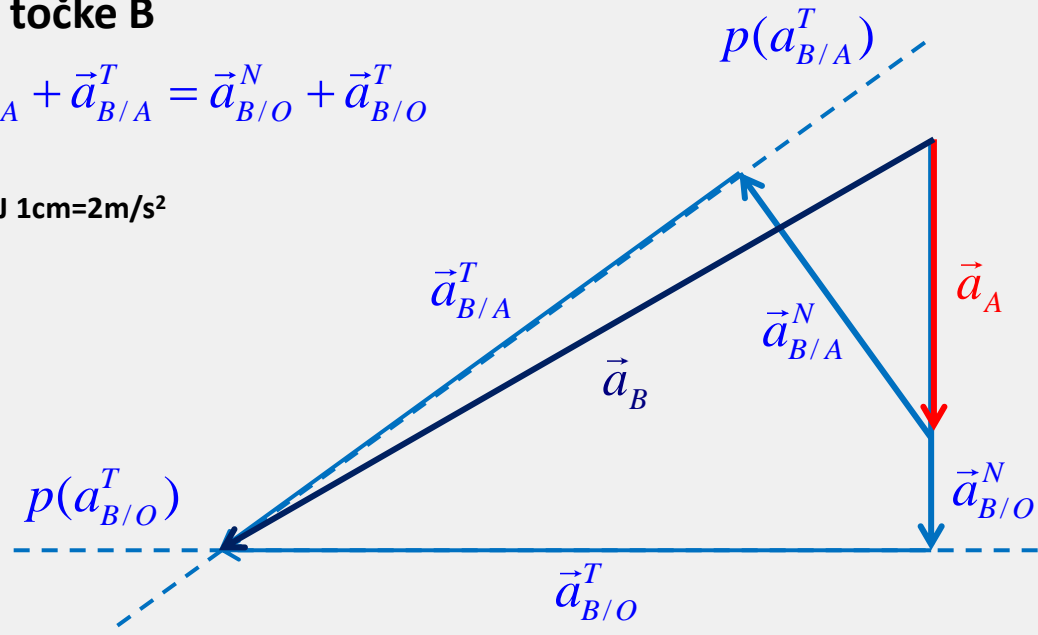
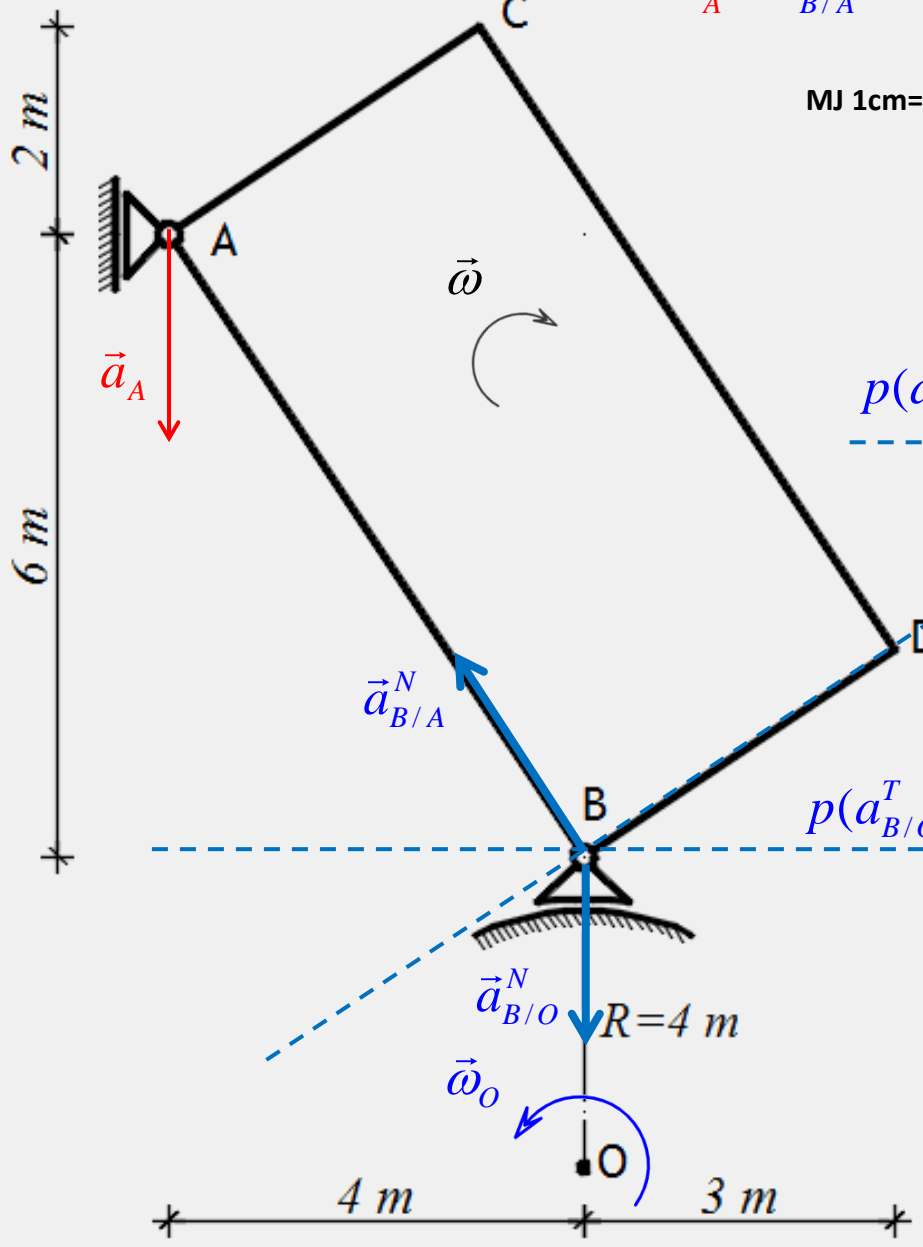


# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



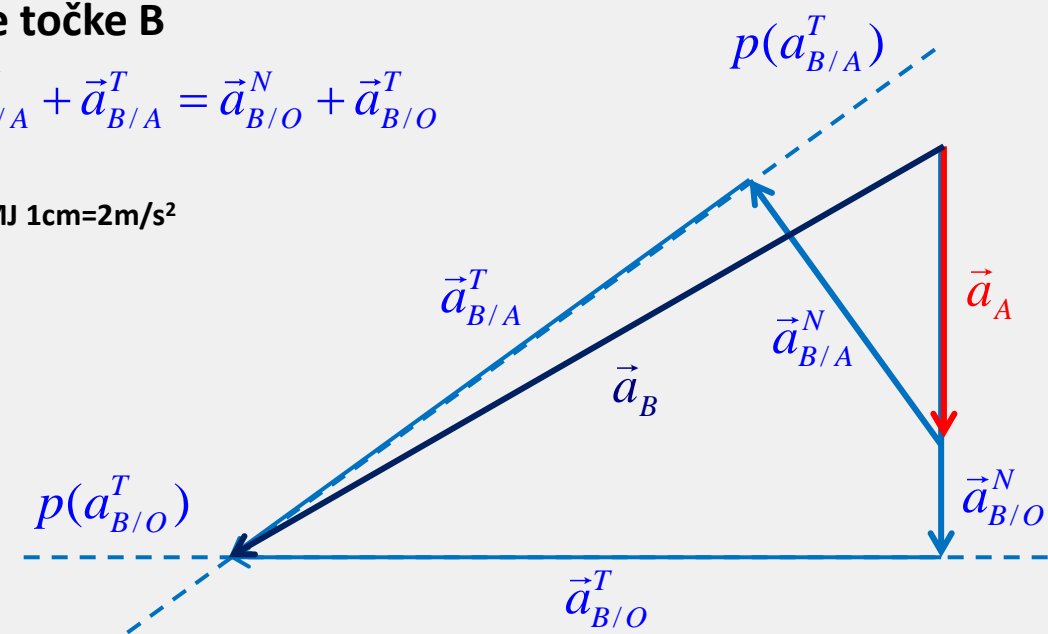
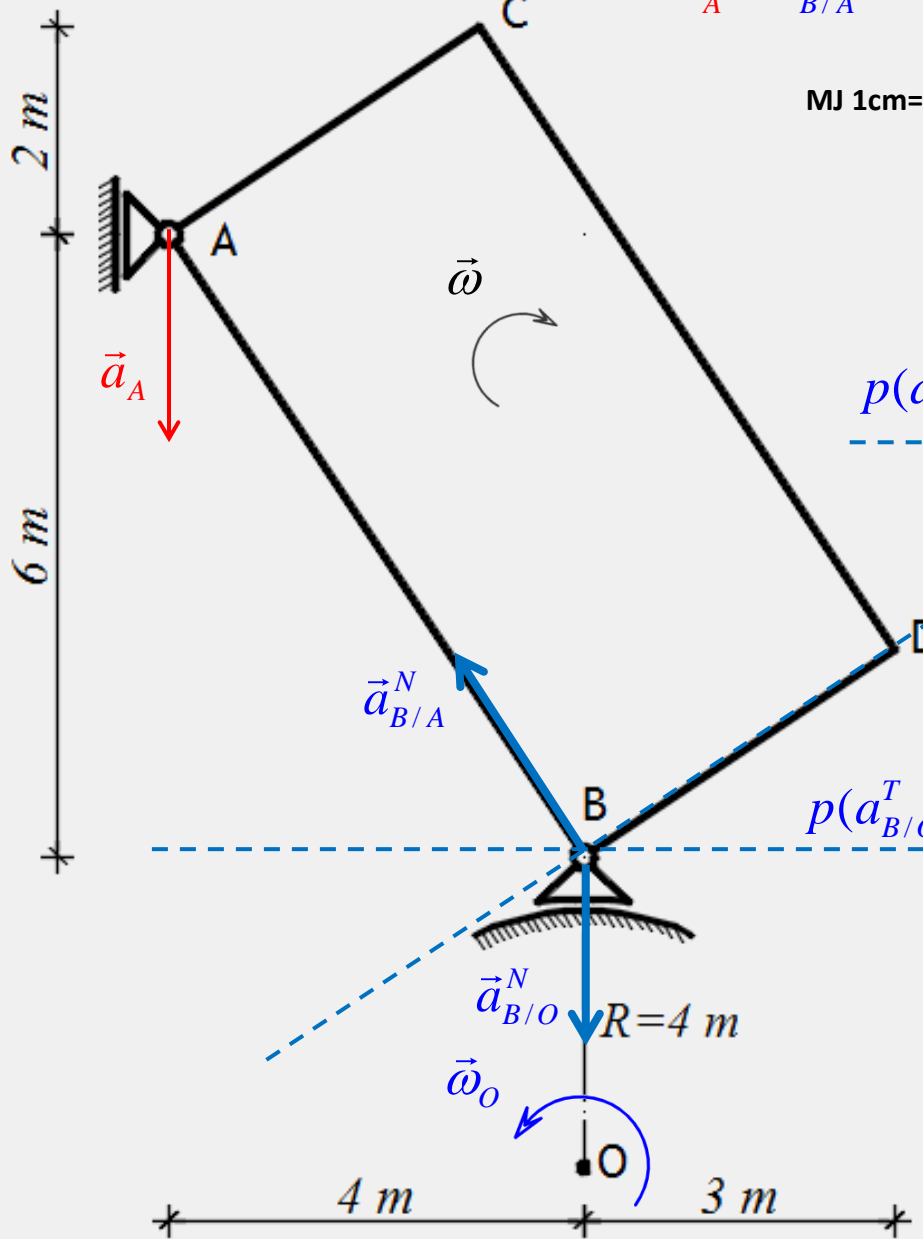
očitano:

# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



očitano:

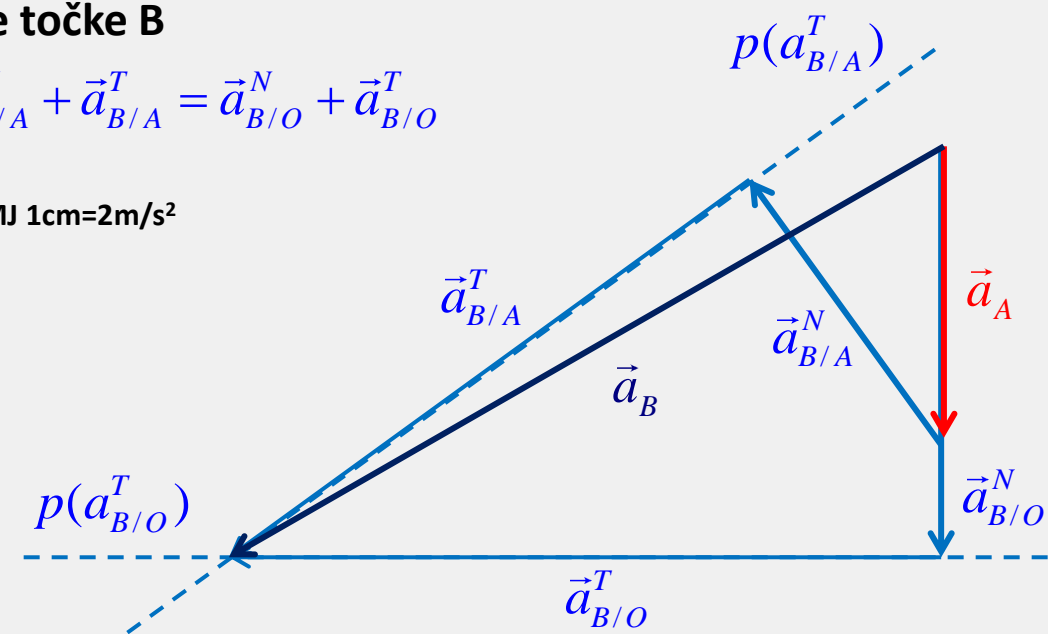
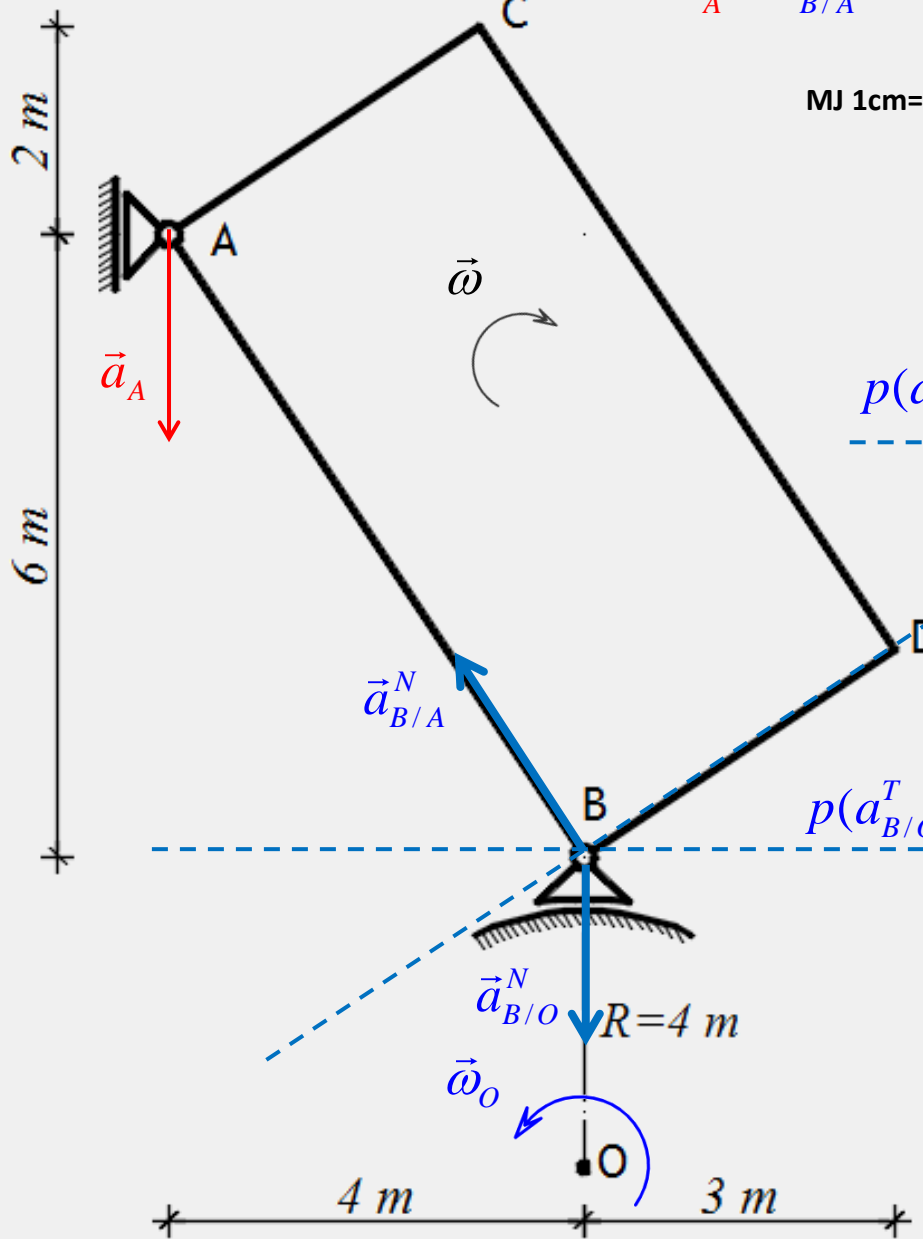
$$a_{B/A}^T = 7,2 \text{ cm} = 14,4 \text{ m/s}^2$$

# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



očitano:

$$a_{B/A}^T = 7,2 \text{ cm} = 14,4 \text{ m/s}^2$$

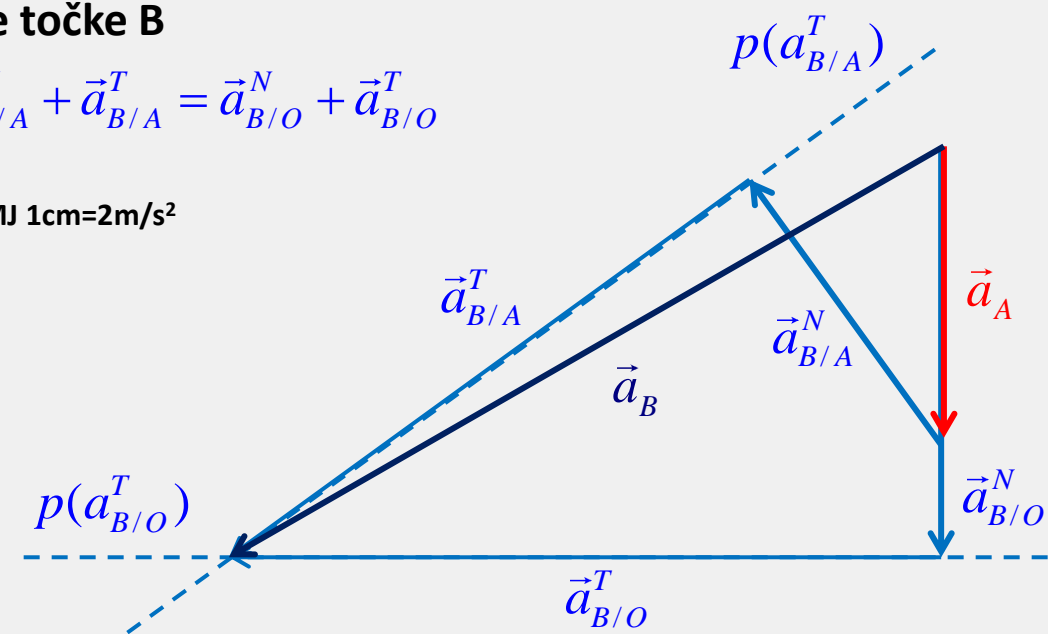
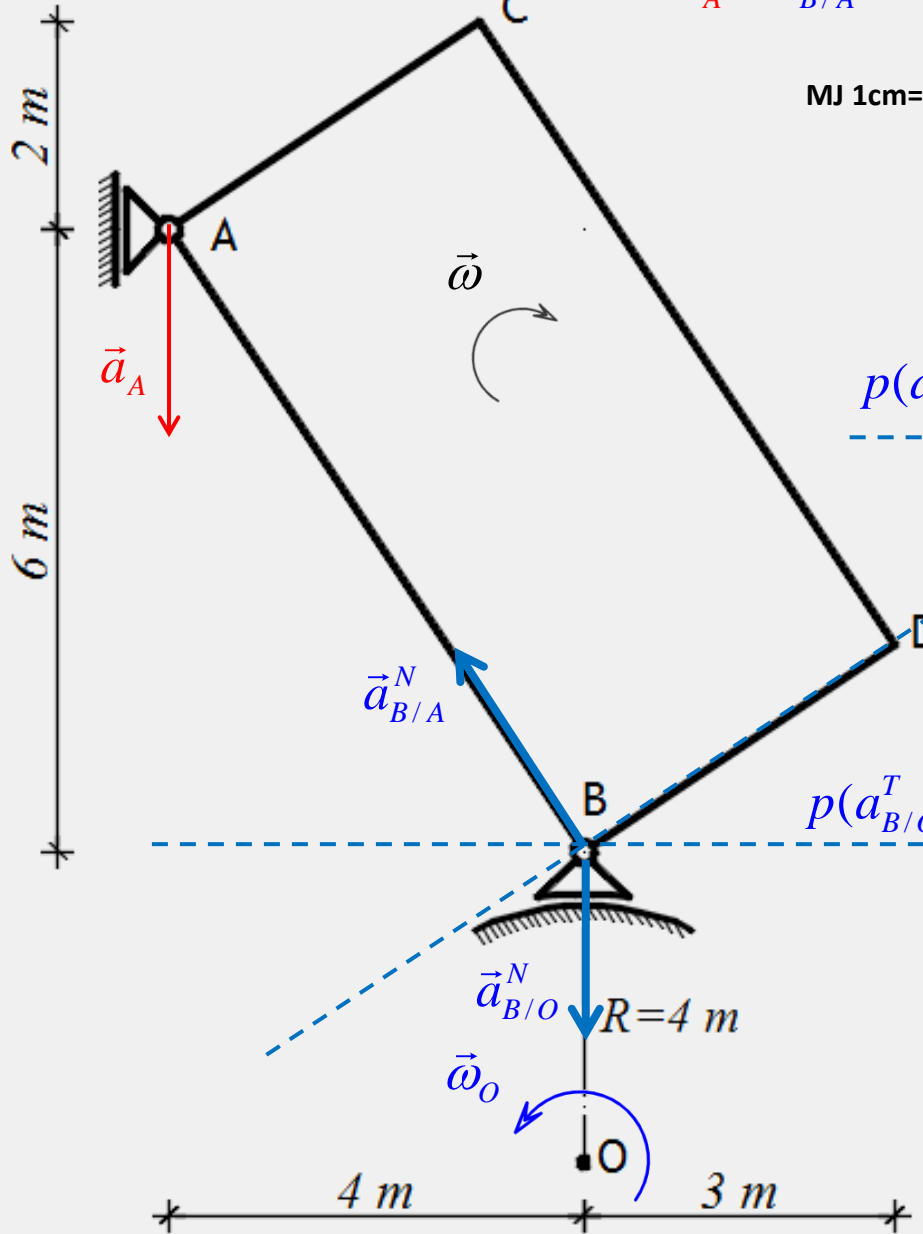
$$a_{B/O}^T = 8 \text{ cm} = 16 \text{ m/s}^2$$

# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



očitano:

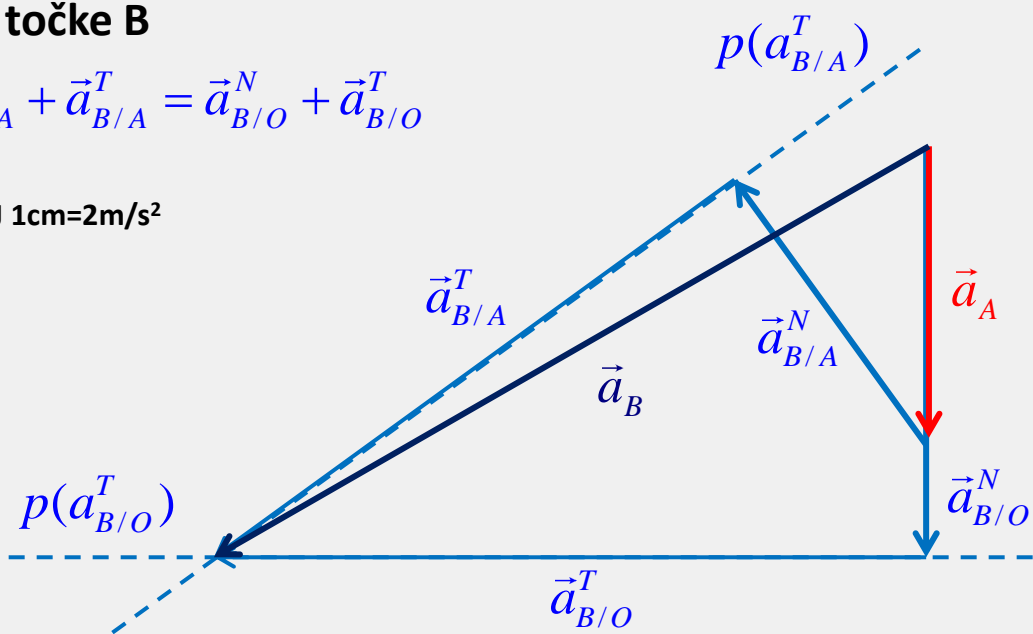
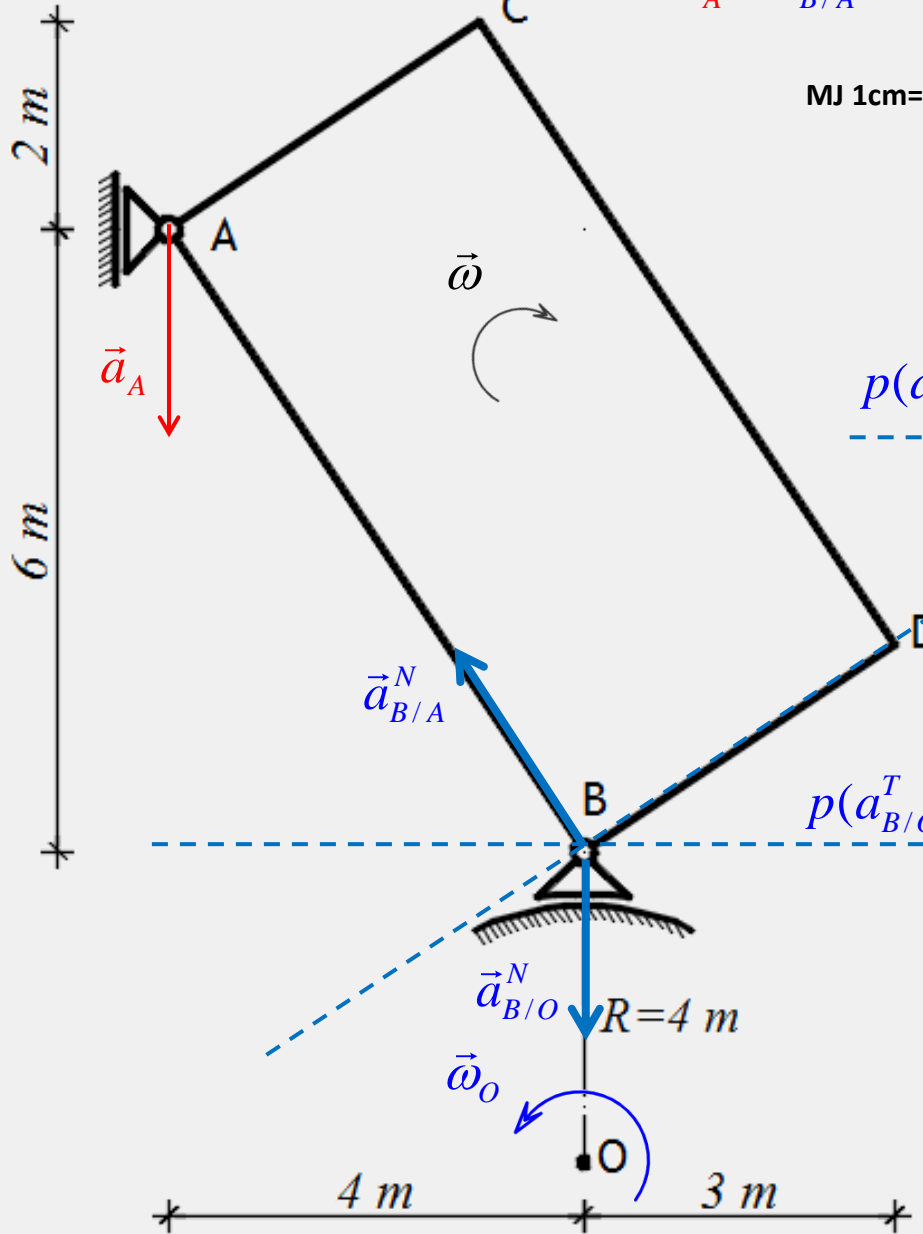
- $a_{B/A}^T = 7,2 \text{ cm} = 14,4 \text{ m/s}^2$
- $a_{B/O}^T = 8 \text{ cm} = 16 \text{ m/s}^2$
- $a_B = 9,2 \text{ cm} = 18,4 \text{ m/s}^2$

# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



očitano:

$$a_{B/A}^T = 7,2 \text{ cm} = 14,4 \text{ m/s}^2$$

$$a_{B/O}^T = 8 \text{ cm} = 16 \text{ m/s}^2$$

$$a_B = 9,2 \text{ cm} = 18,4 \text{ m/s}^2$$

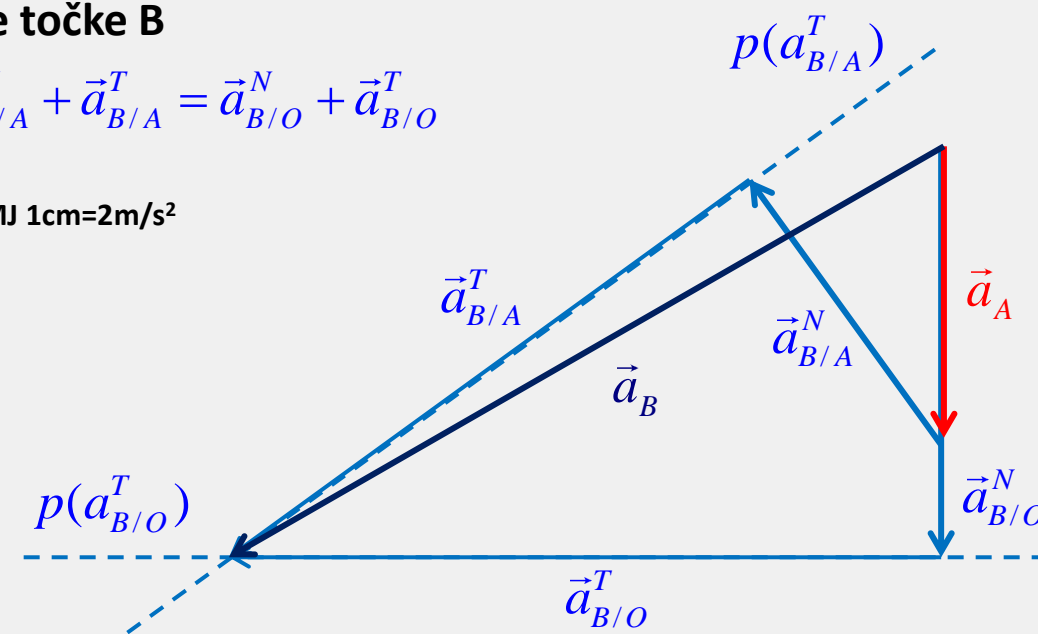
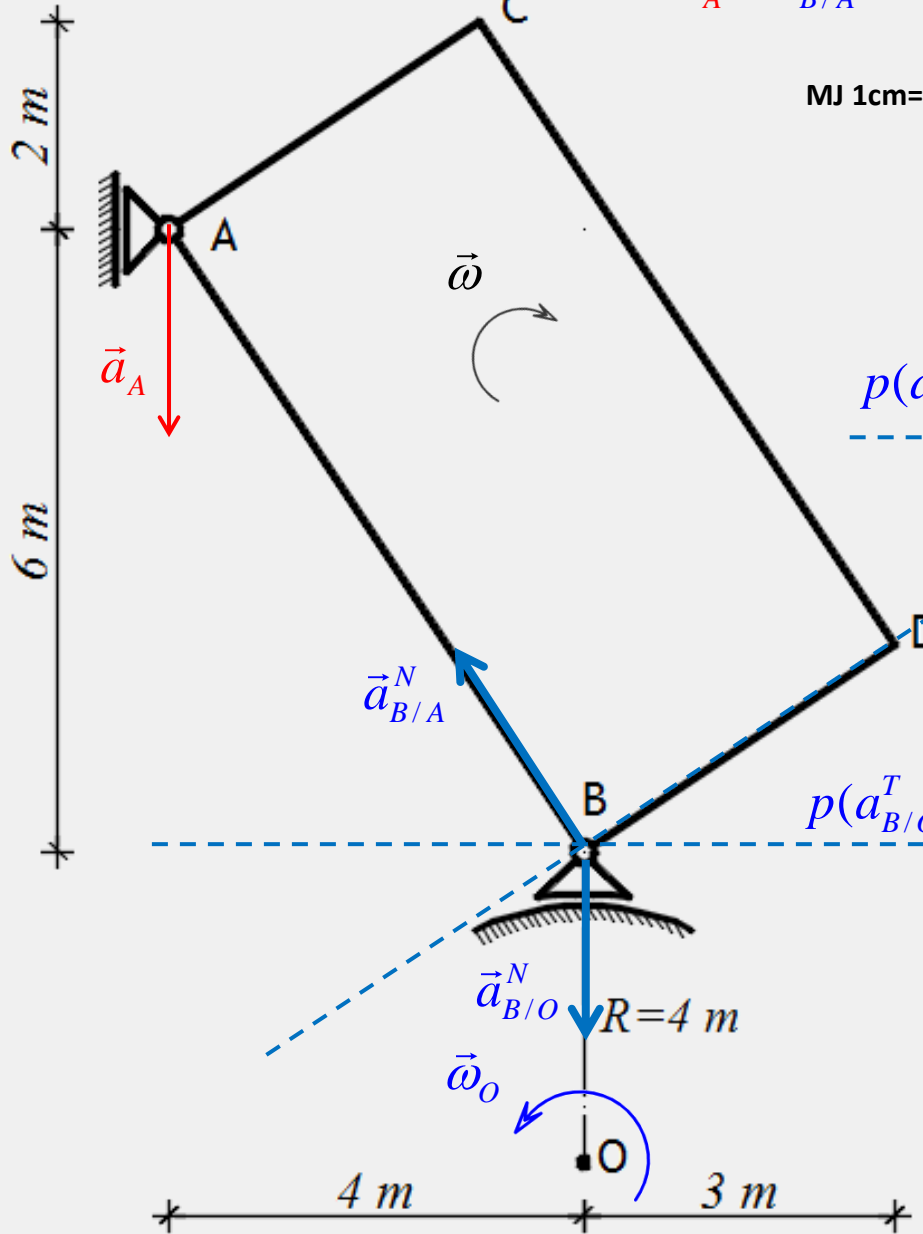
$$\vec{a}_B = -16\vec{i} - 9\vec{j}$$

# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



očitano:

$$a_{B/A}^T = 7,2 \text{ cm} = 14,4 \text{ m/s}^2$$

$$a_{B/O}^T = 8 \text{ cm} = 16 \text{ m/s}^2$$

$$a_B = 9,2 \text{ cm} = 18,4 \text{ m/s}^2$$

$$\vec{a}_B = -16\vec{i} - 9\vec{j}$$

$$\varepsilon = \frac{a_{B/A}^T}{AB} = \frac{14,4}{7,2} = 2 \text{ r/s}^2$$

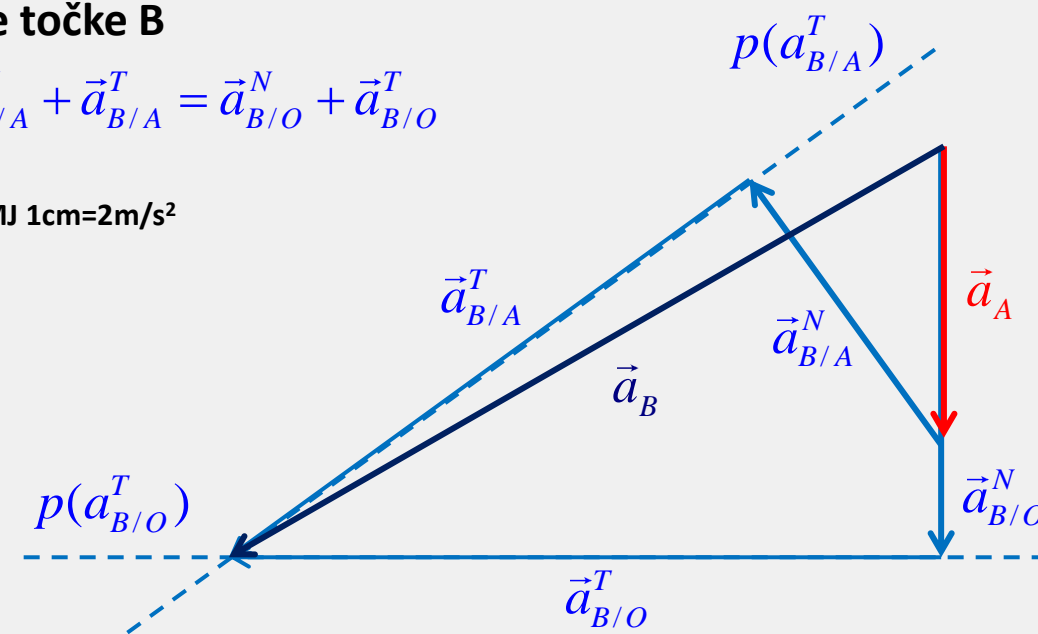
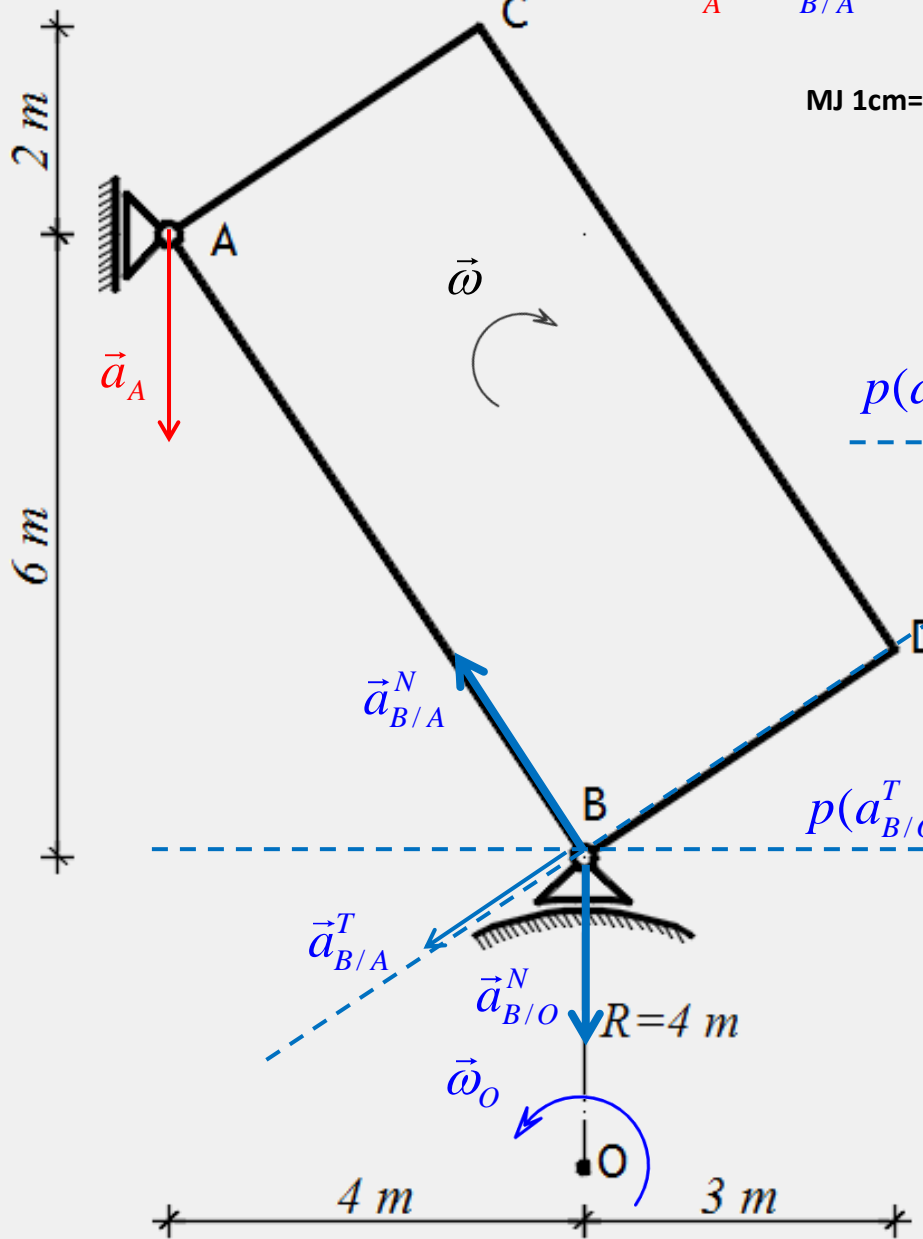


# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



očitano:

$$a_{B/A}^T = 7,2 \text{ cm} = 14,4 \text{ m/s}^2$$

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$$a_B = 9,2 \text{ cm} = 18,4 \text{ m/s}^2$$

$$\vec{a}_B = -16\vec{i} - 9\vec{j}$$

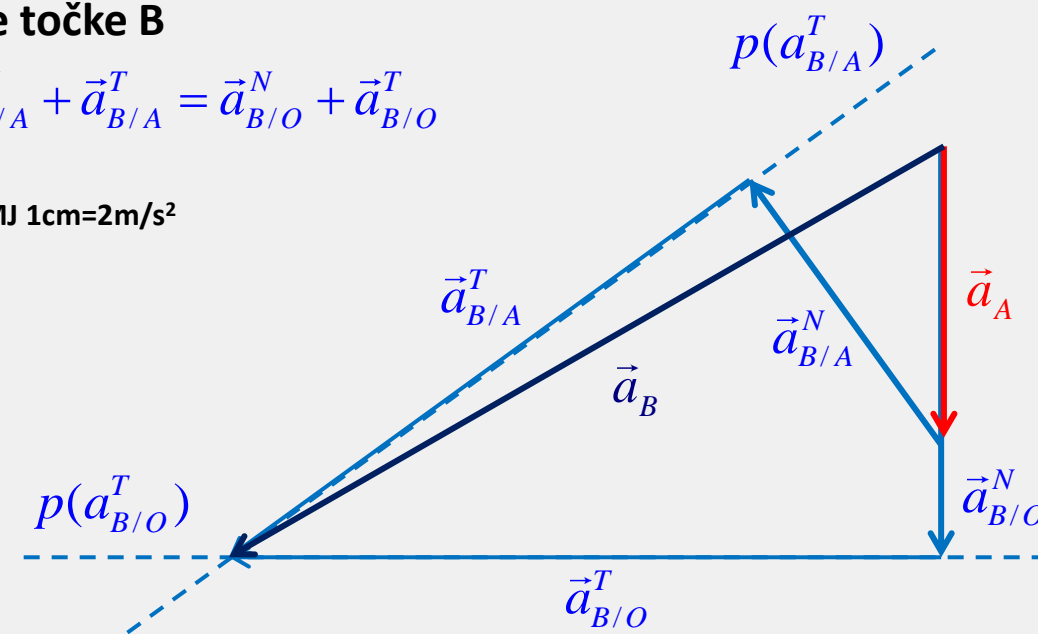
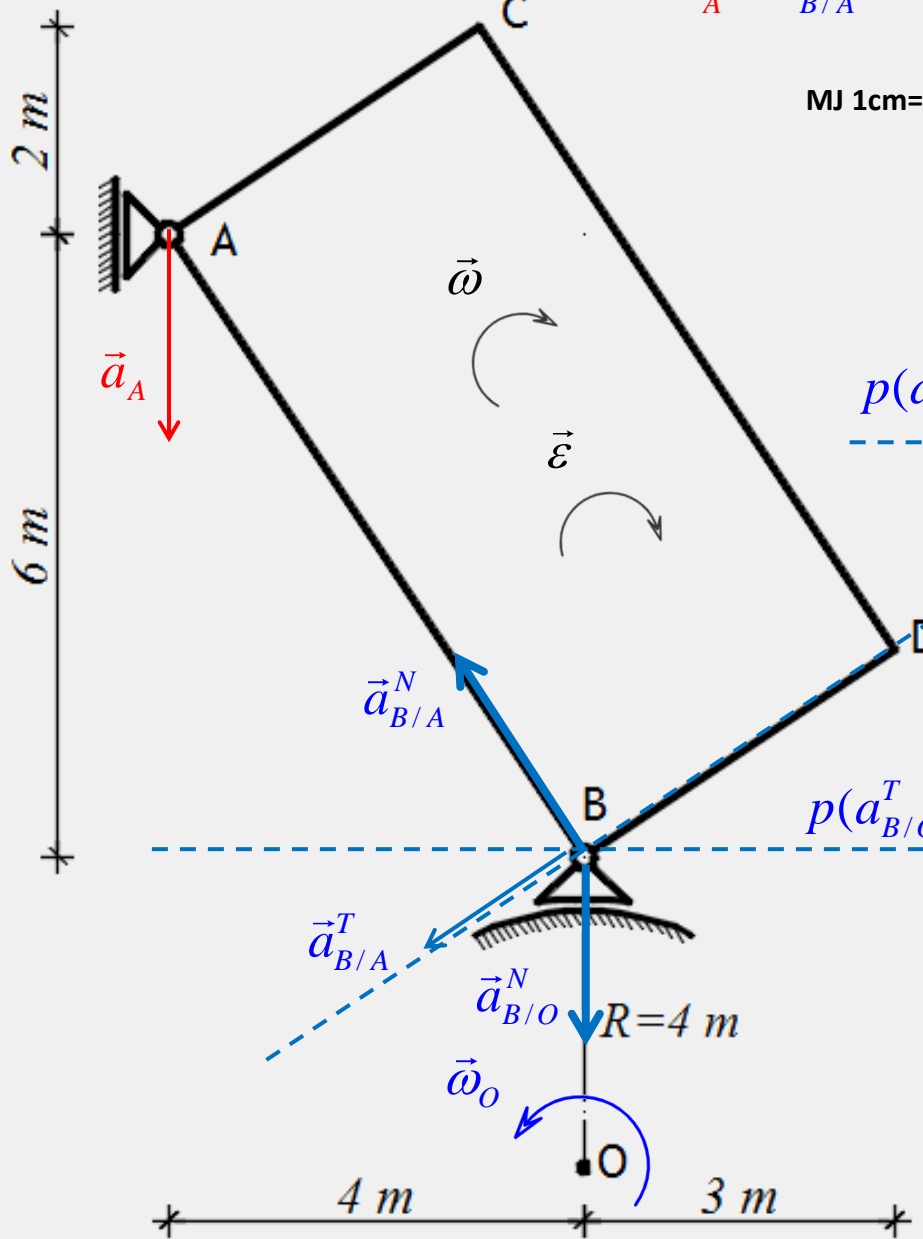
$$\varepsilon = \frac{a_{B/A}^T}{AB} = \frac{14,4}{7,2} = 2 \text{ r/s}^2$$

# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



očitano:

$$a_{B/A}^T = 7,2 \text{ cm} = 14,4 \text{ m/s}^2$$

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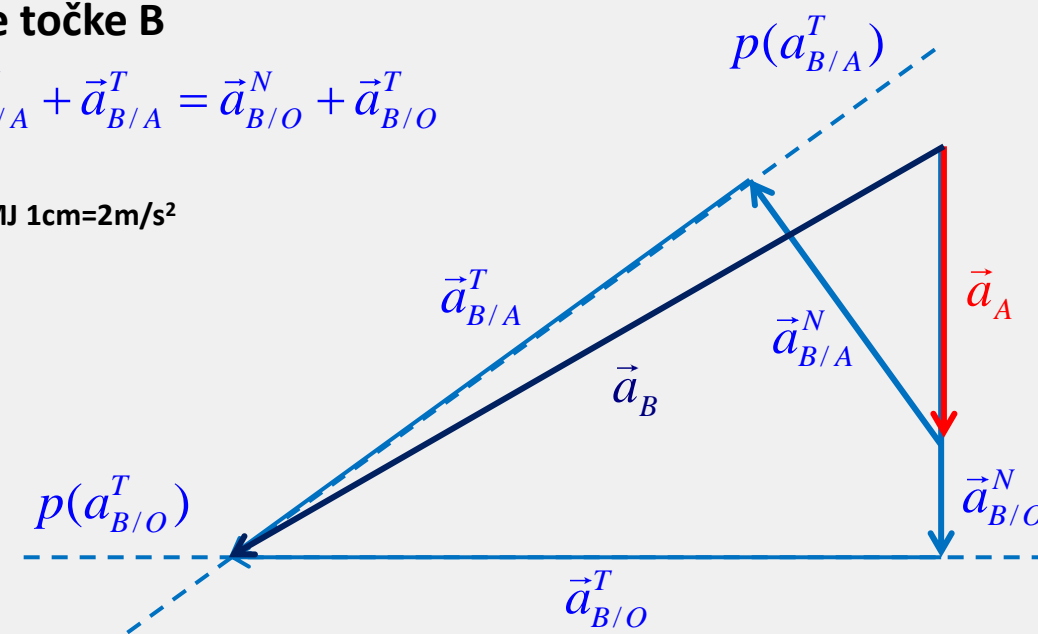
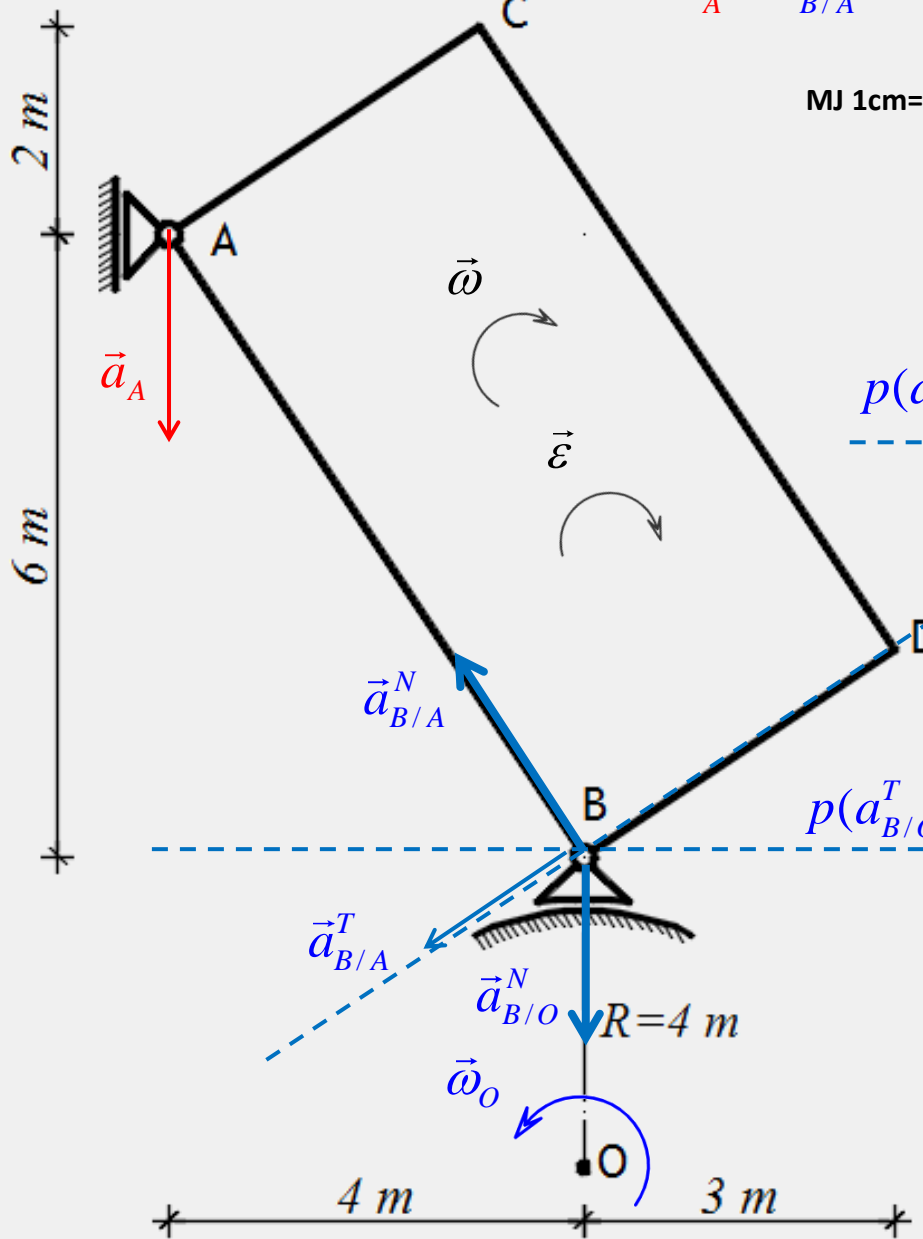
$$\epsilon = \frac{a_{B/A}^T}{AB} = \frac{14,4}{7,2} = 2 \text{ r/s}^2$$

# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



očitano:

$$a_{B/A}^T = 7,2 \text{ cm} = 14,4 \text{ m/s}^2$$

$$a_{B/O}^T = 8 \text{ cm} = 16 \text{ m/s}^2$$

$$a_B = 9,2 \text{ cm} = 18,4 \text{ m/s}^2$$

$$\vec{a}_B = -16\vec{i} - 9\vec{j}$$

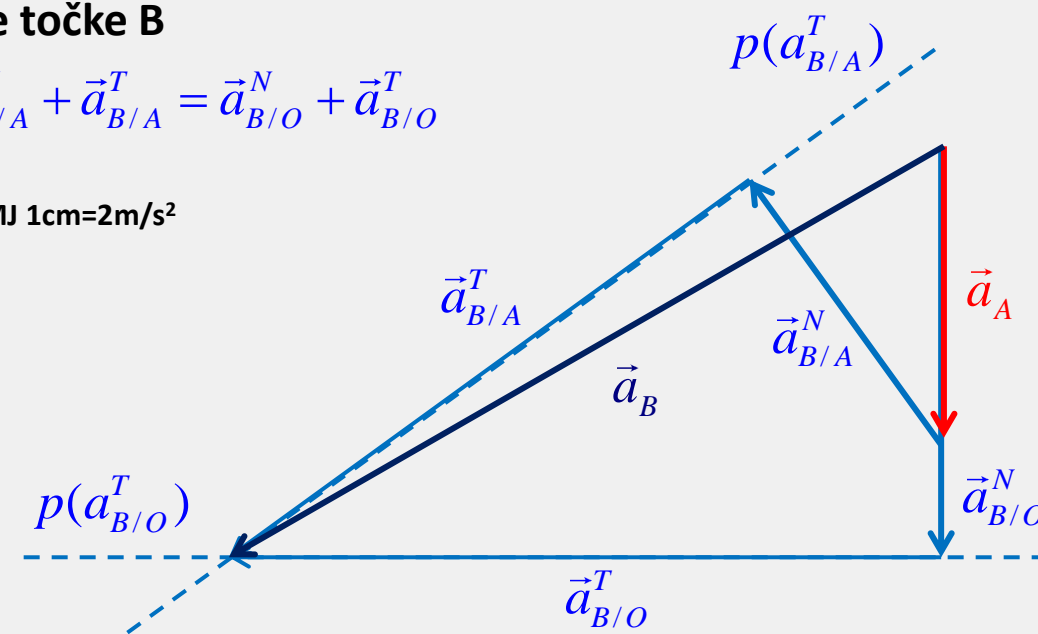
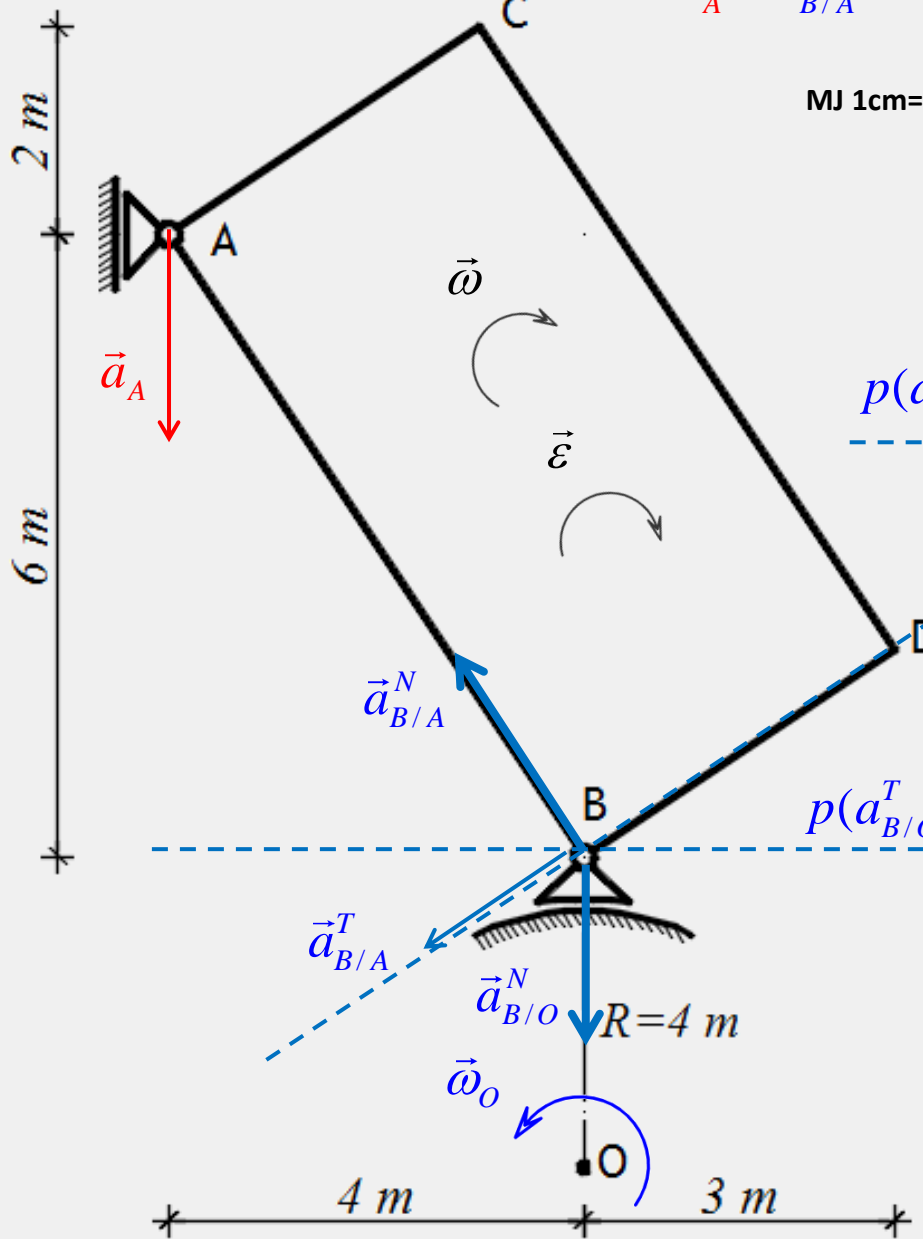
$$\epsilon = \frac{a_{B/A}^T}{AB} = \frac{14,4}{7,2} = 2 \text{ r/s}^2 \quad \vec{\epsilon} = -2\vec{k}$$

# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



očitano:

$$a_{B/A}^T = 7,2 \text{ cm} = 14,4 \text{ m/s}^2$$

$$a_{B/O}^T = 8 \text{ cm} = 16 \text{ m/s}^2$$

$$a_B = 9,2 \text{ cm} = 18,4 \text{ m/s}^2$$

$$\vec{a}_B = -16\vec{i} - 9\vec{j}$$

$$\varepsilon = \frac{a_{B/A}^T}{AB} = \frac{14,4}{7,2} = 2 \text{ r/s}^2 \quad \vec{\varepsilon} = -2\vec{k}$$

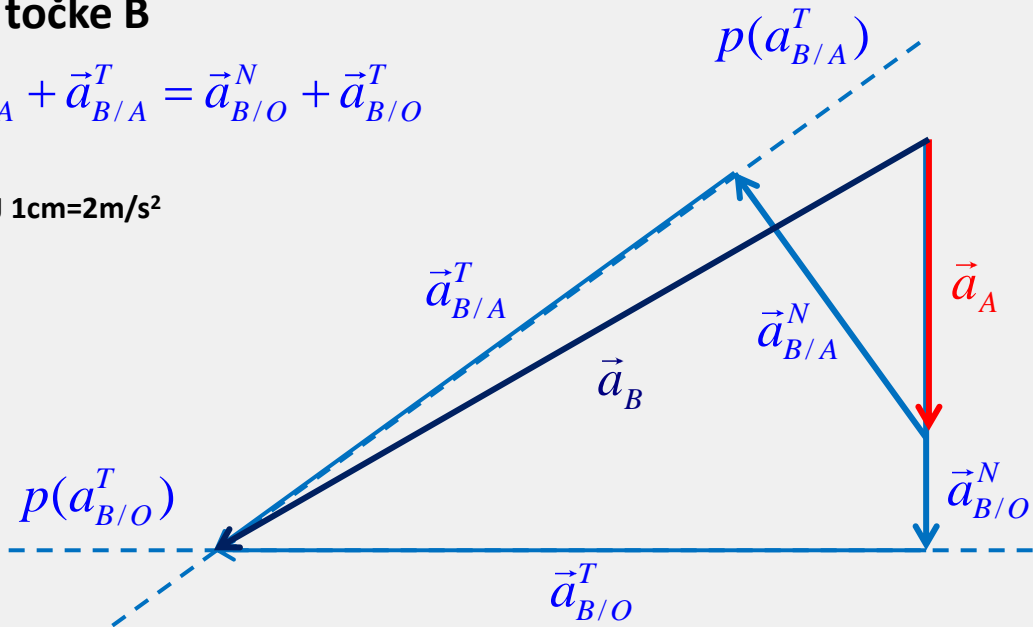
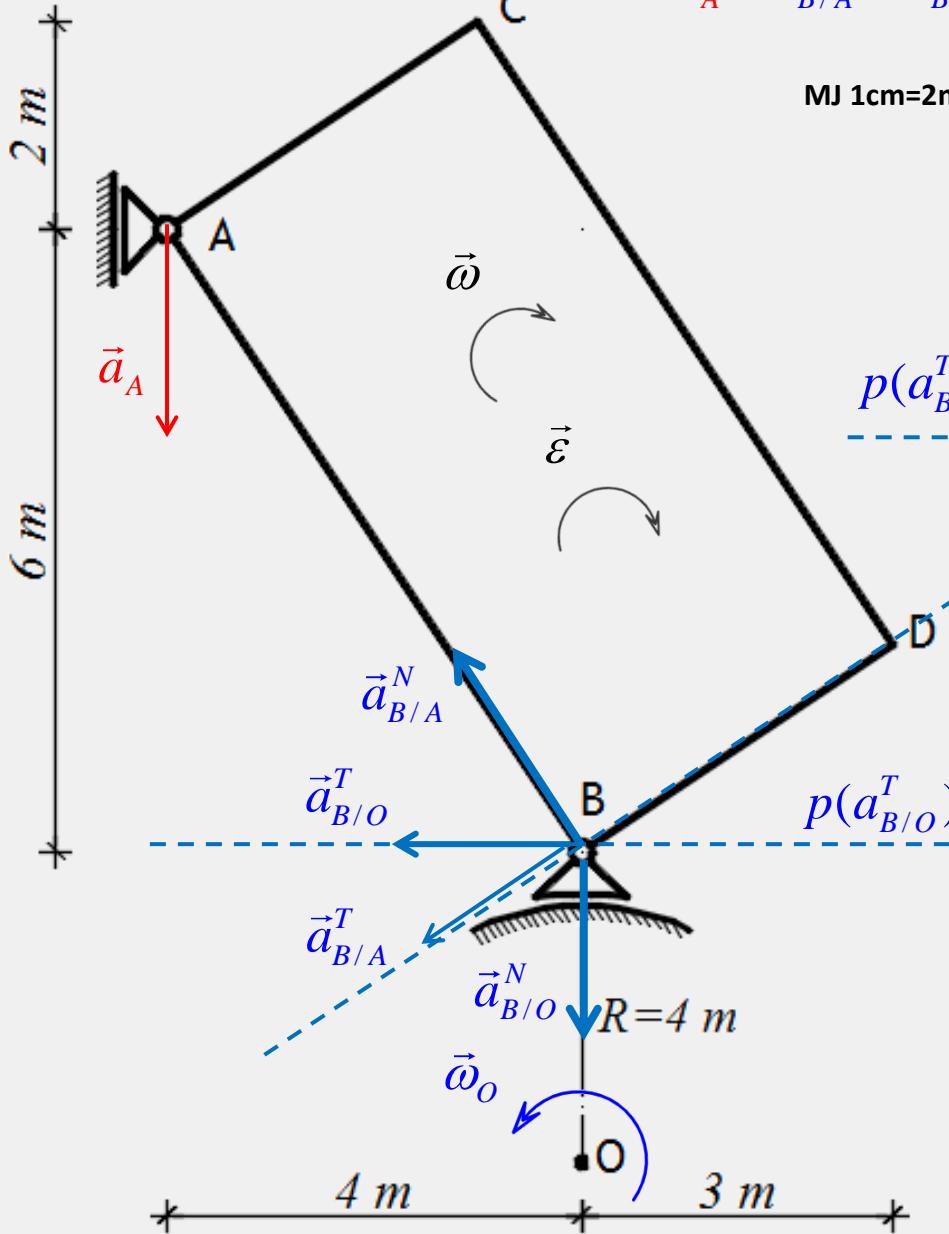
$$\varepsilon_0 = \frac{a_{B/O}^T}{R} = \frac{16}{4} = 4 \text{ r/s}^2$$

# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



očitano:

$$a_{B/A}^T = 7,2 \text{ cm} = 14,4 \text{ m/s}^2$$

$$a_{B/O}^T = 8 \text{ cm} = 16 \text{ m/s}^2$$

$$a_B = 9,2 \text{ cm} = 18,4 \text{ m/s}^2$$

$$\vec{a}_B = -16\vec{i} - 9\vec{j}$$

$$\varepsilon = \frac{a_{B/A}^T}{AB} = \frac{14,4}{7,2} = 2 \text{ r/s}^2 \quad \vec{\varepsilon} = -2\vec{k}$$

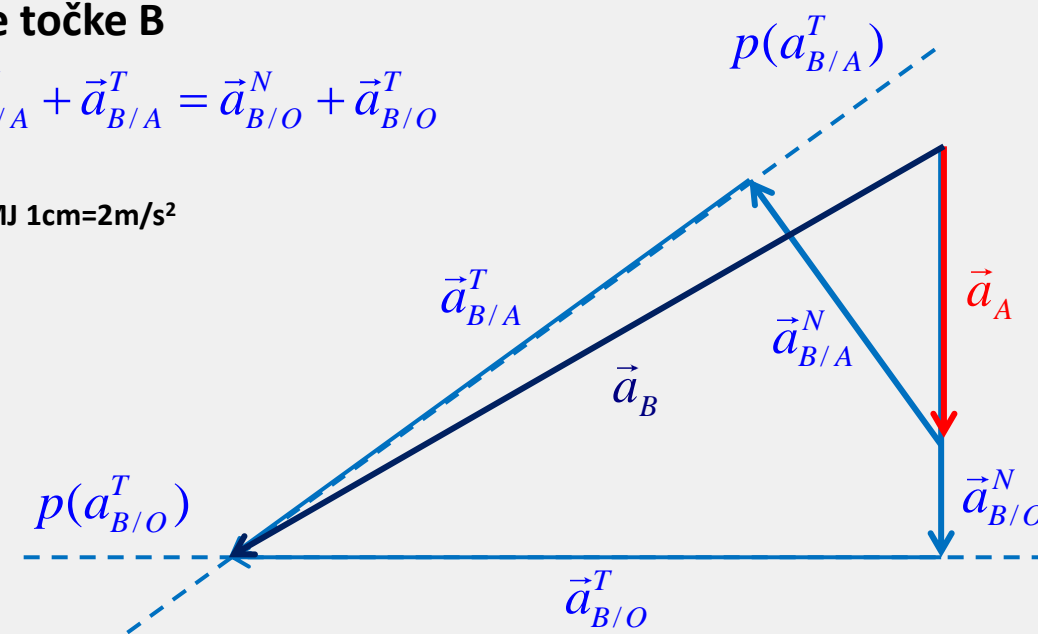
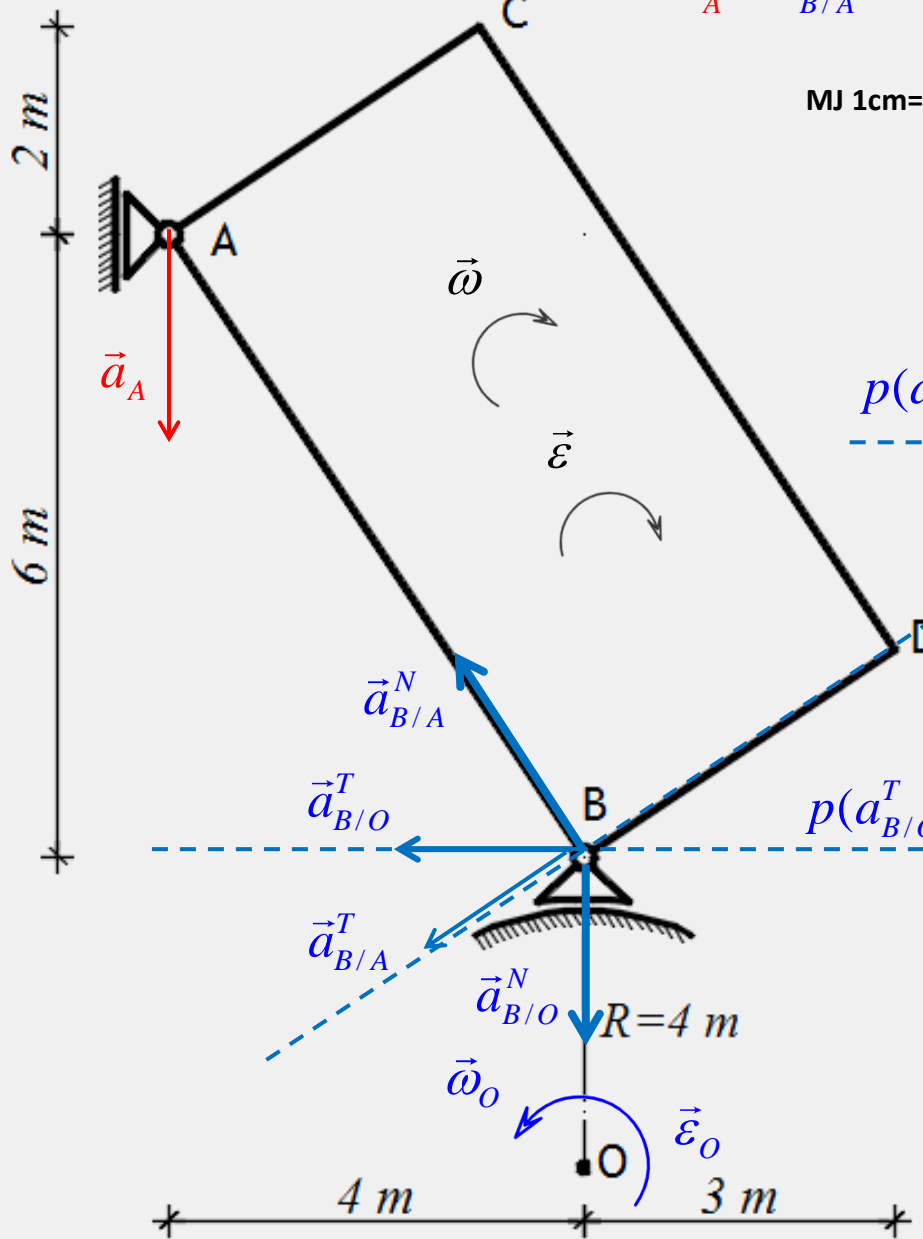
$$\varepsilon_O = \frac{a_{B/O}^T}{R} = \frac{16}{4} = 4 \text{ r/s}^2$$

# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



očitano:

$$a_{B/A}^T = 7,2 \text{ cm} = 14,4 \text{ m/s}^2$$

$$a_{B/O}^T = 8 \text{ cm} = 16 \text{ m/s}^2$$

$$a_B = 9,2 \text{ cm} = 18,4 \text{ m/s}^2$$

$$\vec{a}_B = -16\vec{i} - 9\vec{j}$$

$$\varepsilon = \frac{a_{B/A}^T}{AB} = \frac{14,4}{7,2} = 2 \text{ r/s}^2 \quad \vec{\varepsilon} = -2\vec{k}$$

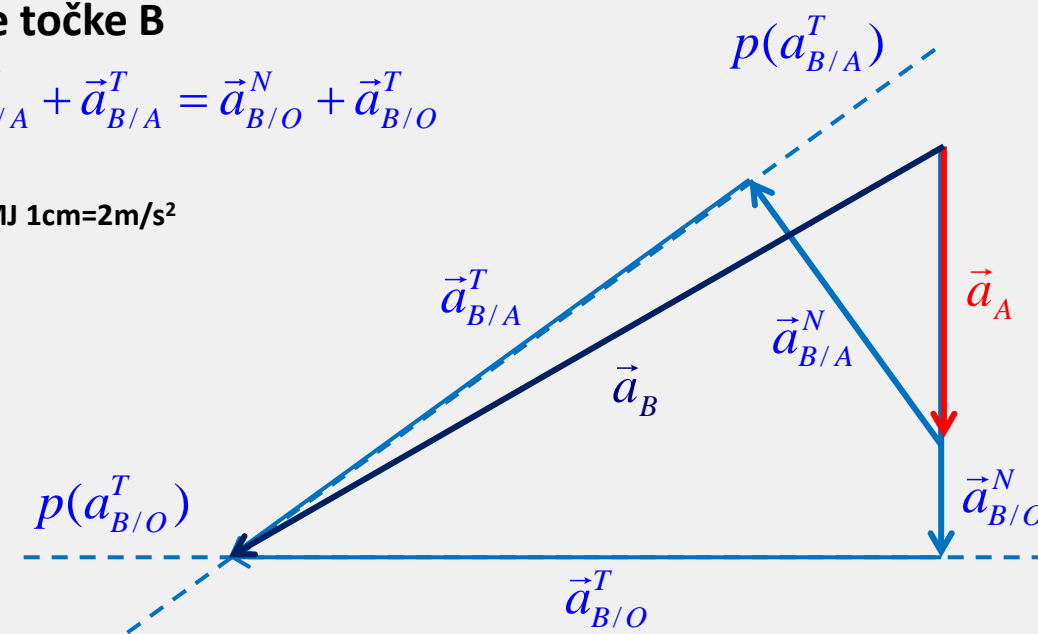
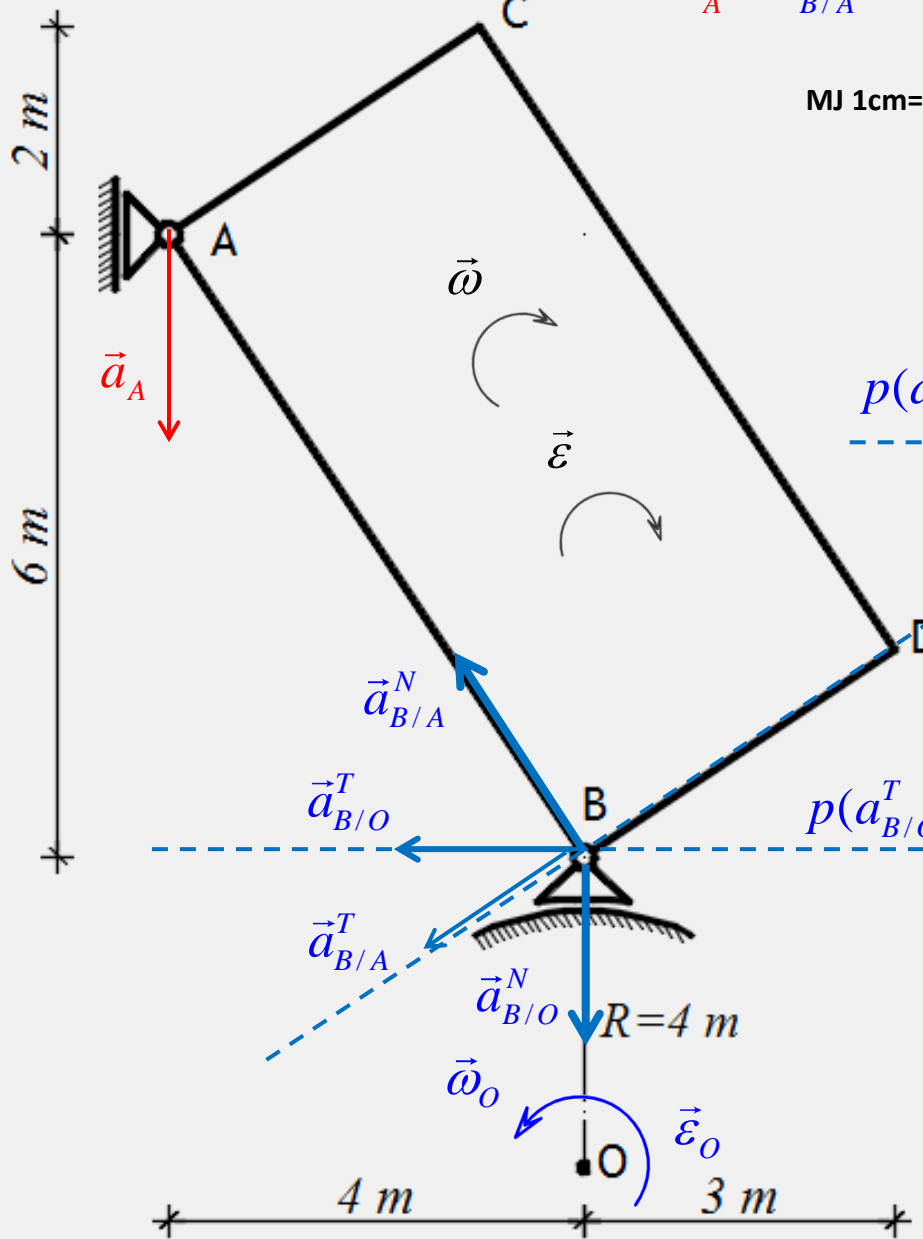
$$\varepsilon_O = \frac{a_{B/O}^T}{R} = \frac{16}{4} = 4 \text{ r/s}^2$$

# UBRZANJA

## Ubrzanje točke B

$$\vec{a}_A + \vec{a}_{B/A}^N + \vec{a}_{B/A}^T = \vec{a}_{B/O}^N + \vec{a}_{B/O}^T$$

MJ 1cm=2m/s<sup>2</sup>



očitano:

$$a_{B/A}^T = 7,2 \text{ cm} = 14,4 \text{ m/s}^2$$

$$a_{B/O}^T = 8 \text{ cm} = 16 \text{ m/s}^2$$

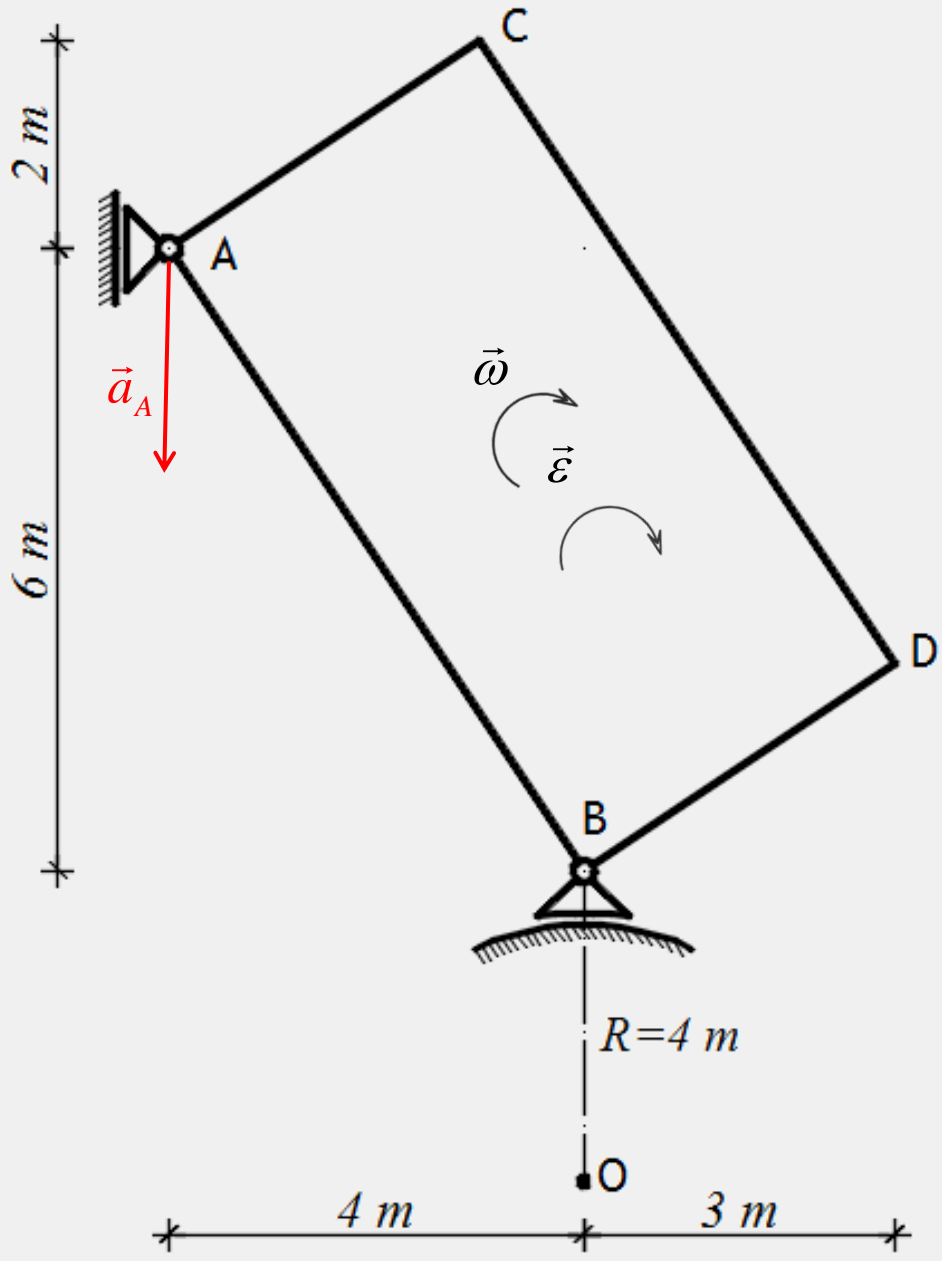
$$a_B = 9,2 \text{ cm} = 18,4 \text{ m/s}^2$$

$$\vec{a}_B = -16\vec{i} - 9\vec{j}$$

$$\epsilon = \frac{a_{B/A}^T}{AB} = \frac{14,4}{7,2} = 2 \text{ r/s}^2 \quad \vec{\epsilon} = -2\vec{k}$$

$$\epsilon_O = \frac{a_{B/O}^T}{R} = \frac{16}{4} = 4 \text{ r/s}^2 \quad \vec{\epsilon}_O = 4\vec{k}$$

**BRZINE**

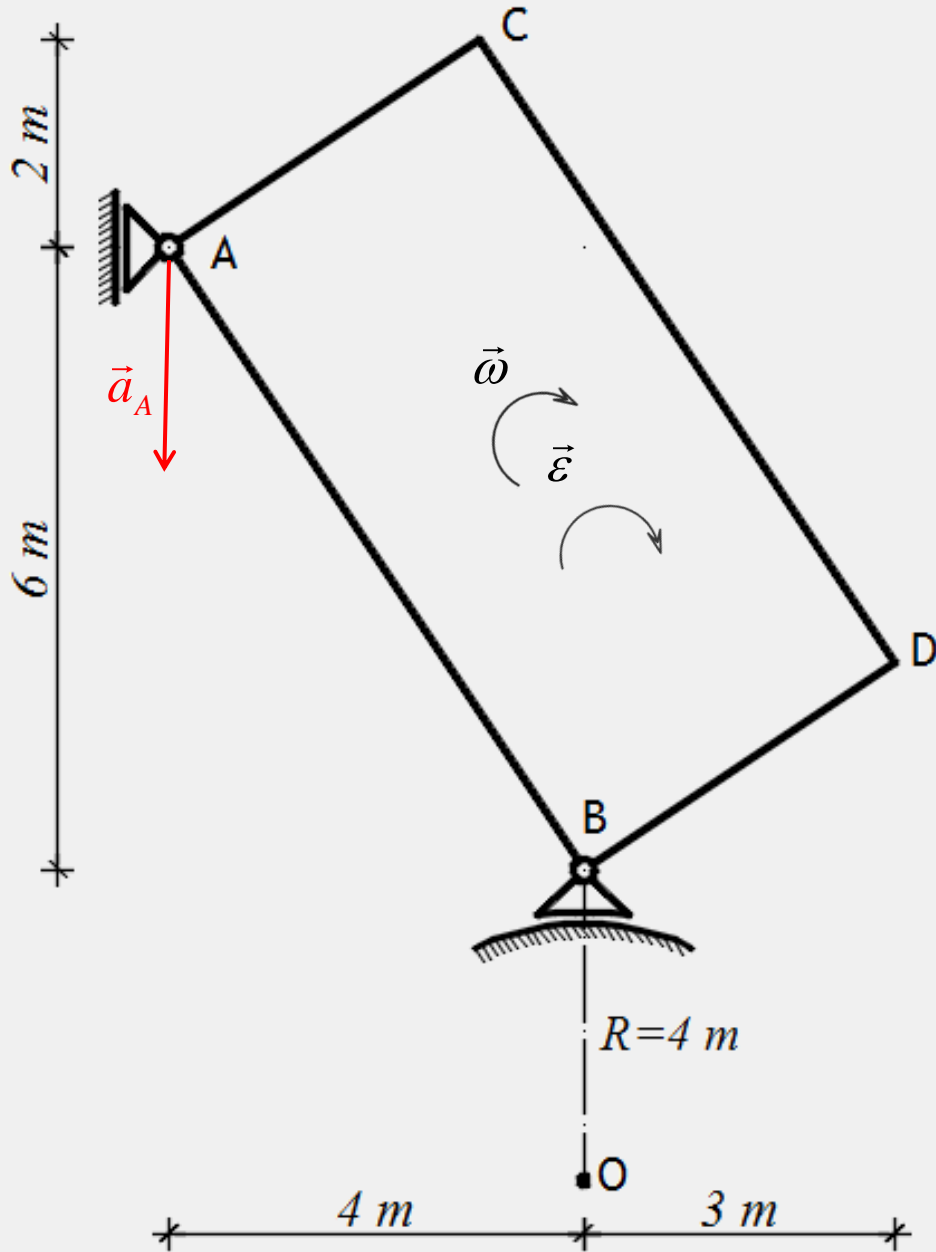




# BRZINE

## Ubrzanje točke C

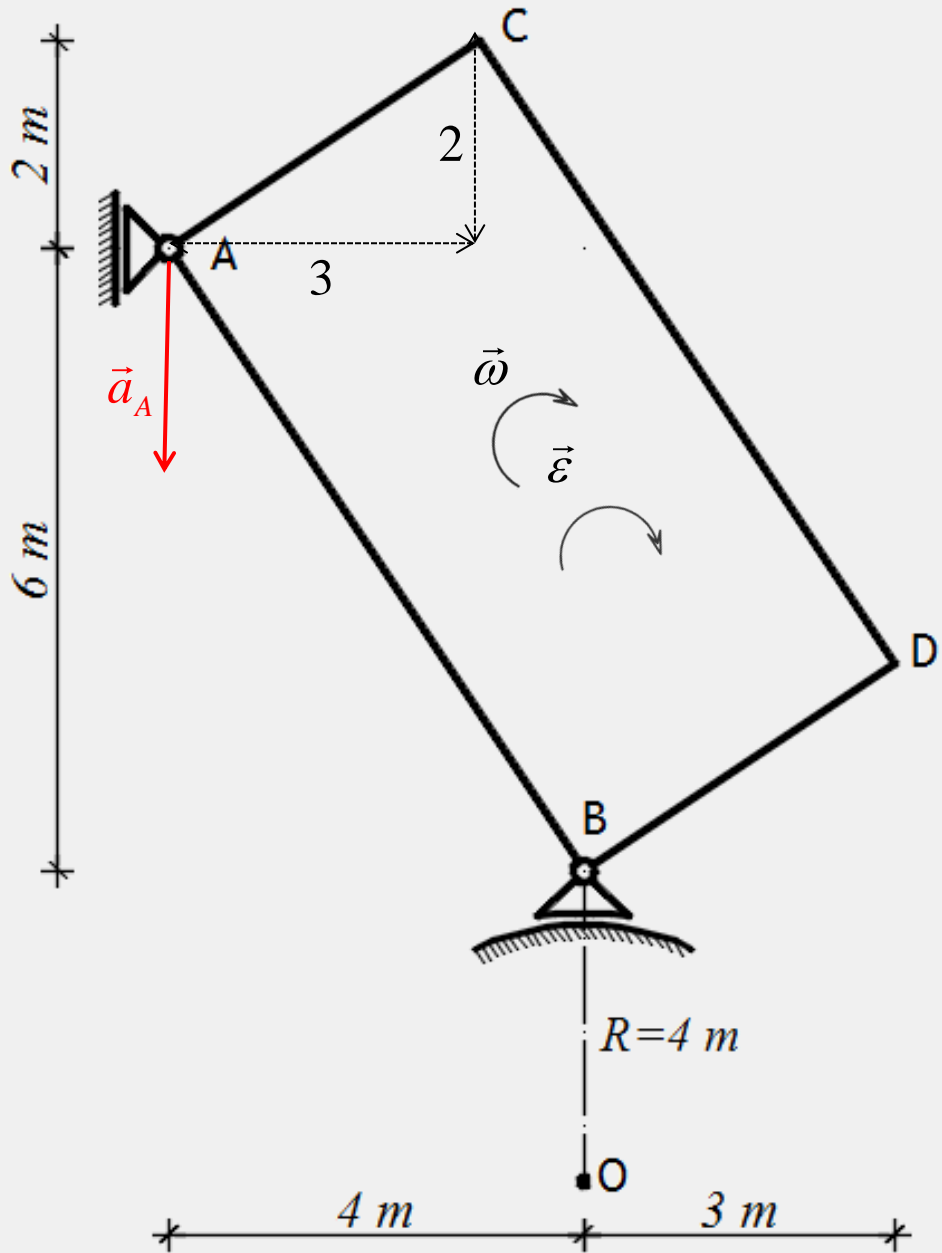
$$\vec{a}_C = \vec{a}_A + \vec{a}_{C/A}^N + \vec{a}_{C/A}^T$$



# BRZINE

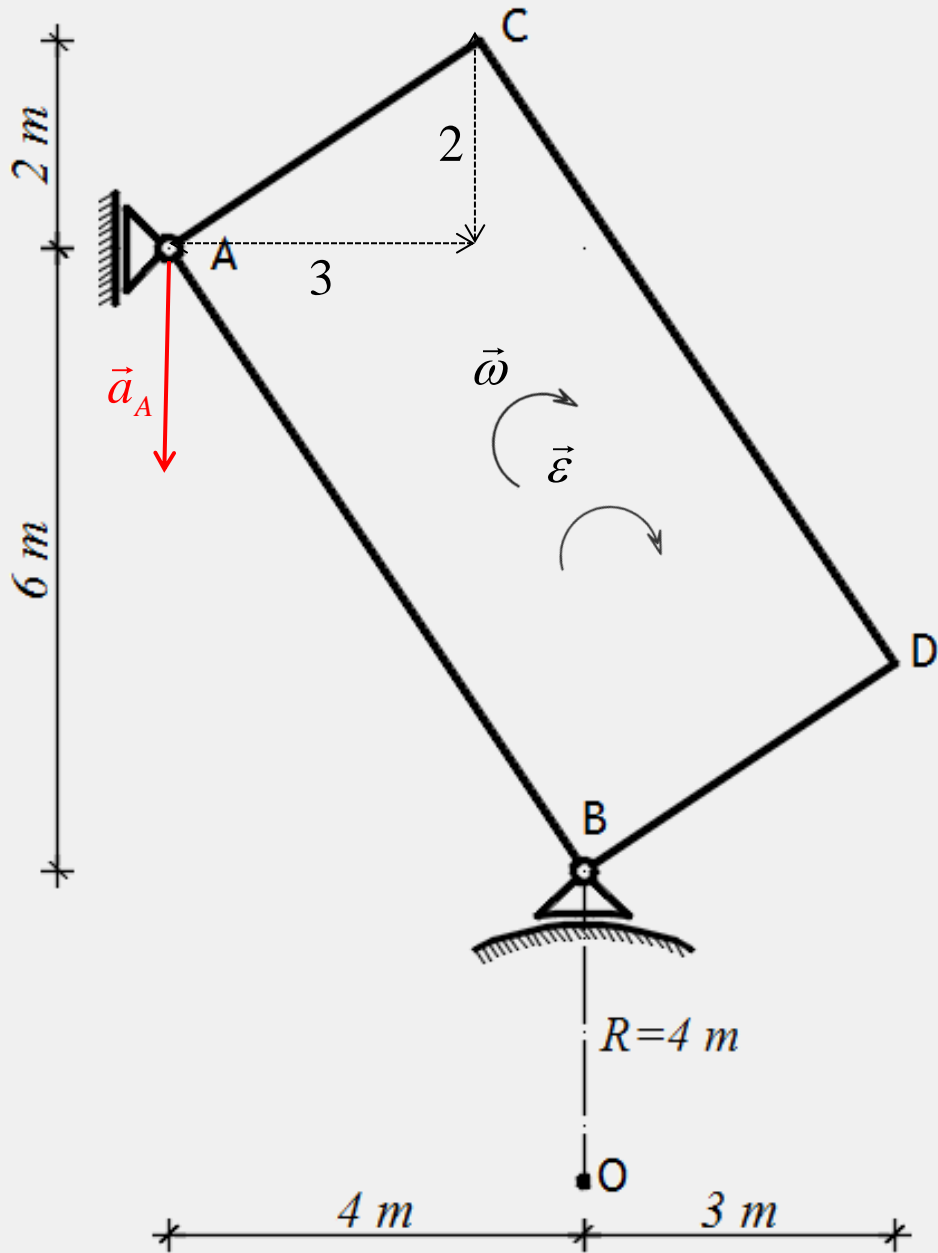
## Ubrzanje točke C

$$\vec{a}_C = \vec{a}_A + \vec{a}_{C/A}^N + \vec{a}_{C/A}^T$$



# BRZINE

## Ubrzanje točke C

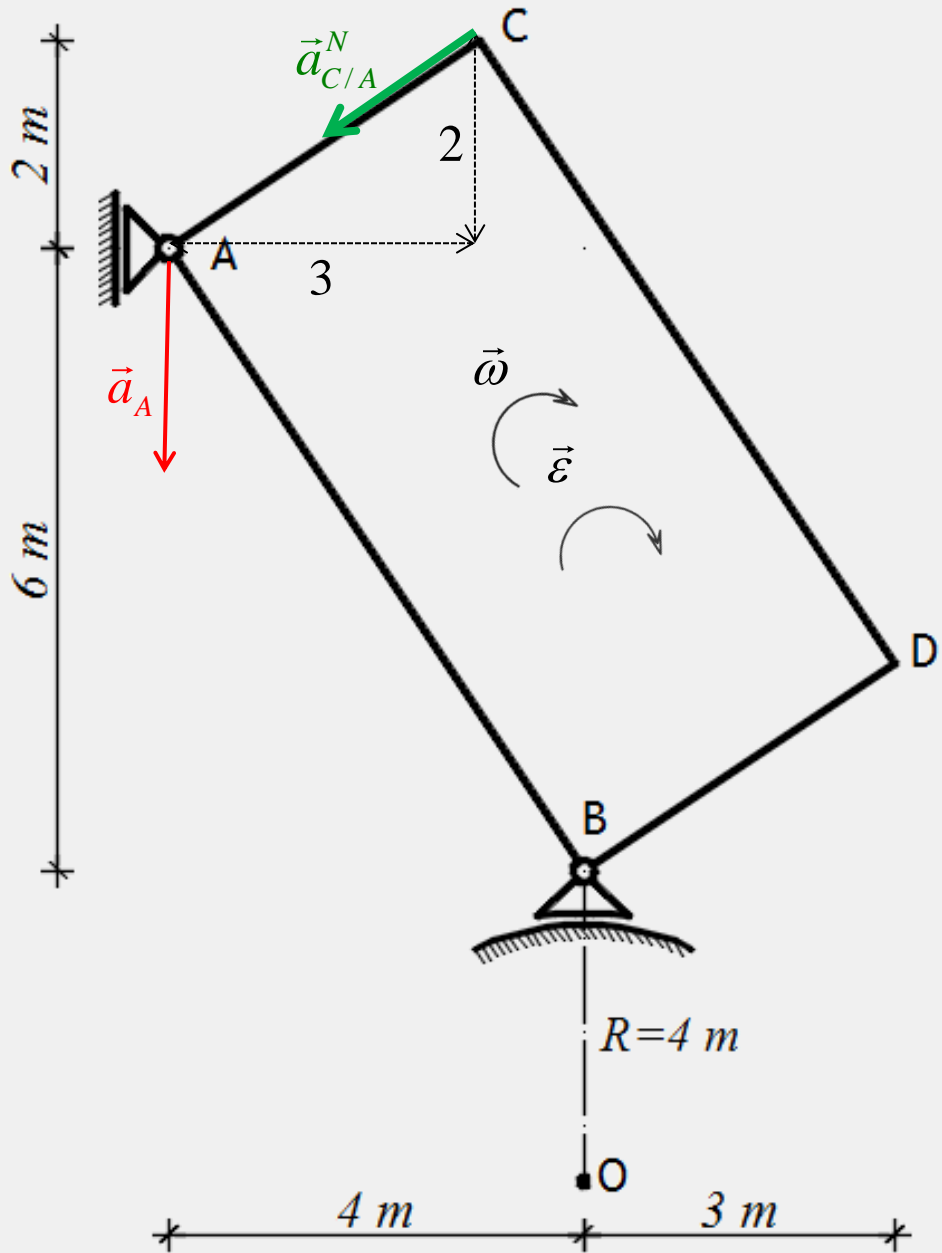


$$\vec{a}_C = \vec{a}_A + \vec{a}_{C/A}^N + \vec{a}_{C/A}^T$$

$$\vec{a}_C = -7 \vec{j}$$

# BRZINE

## Ubrzanje točke C

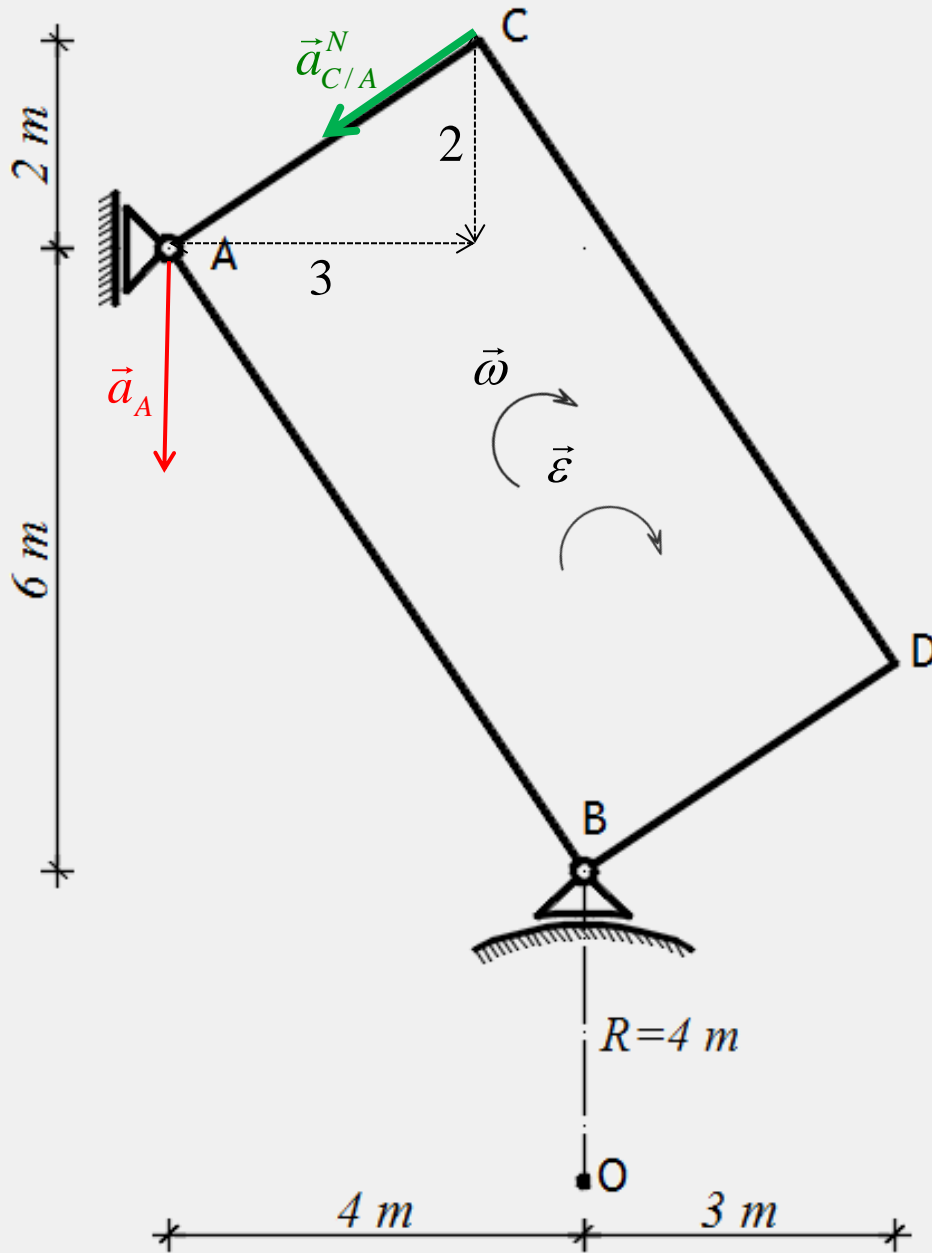


$$\vec{a}_C = \vec{a}_A + \vec{a}_{C/A}^N + \vec{a}_{C/A}^T$$

$$\vec{a}_C = -7\vec{j}$$

# BRZINE

## Ubrzanje točke C

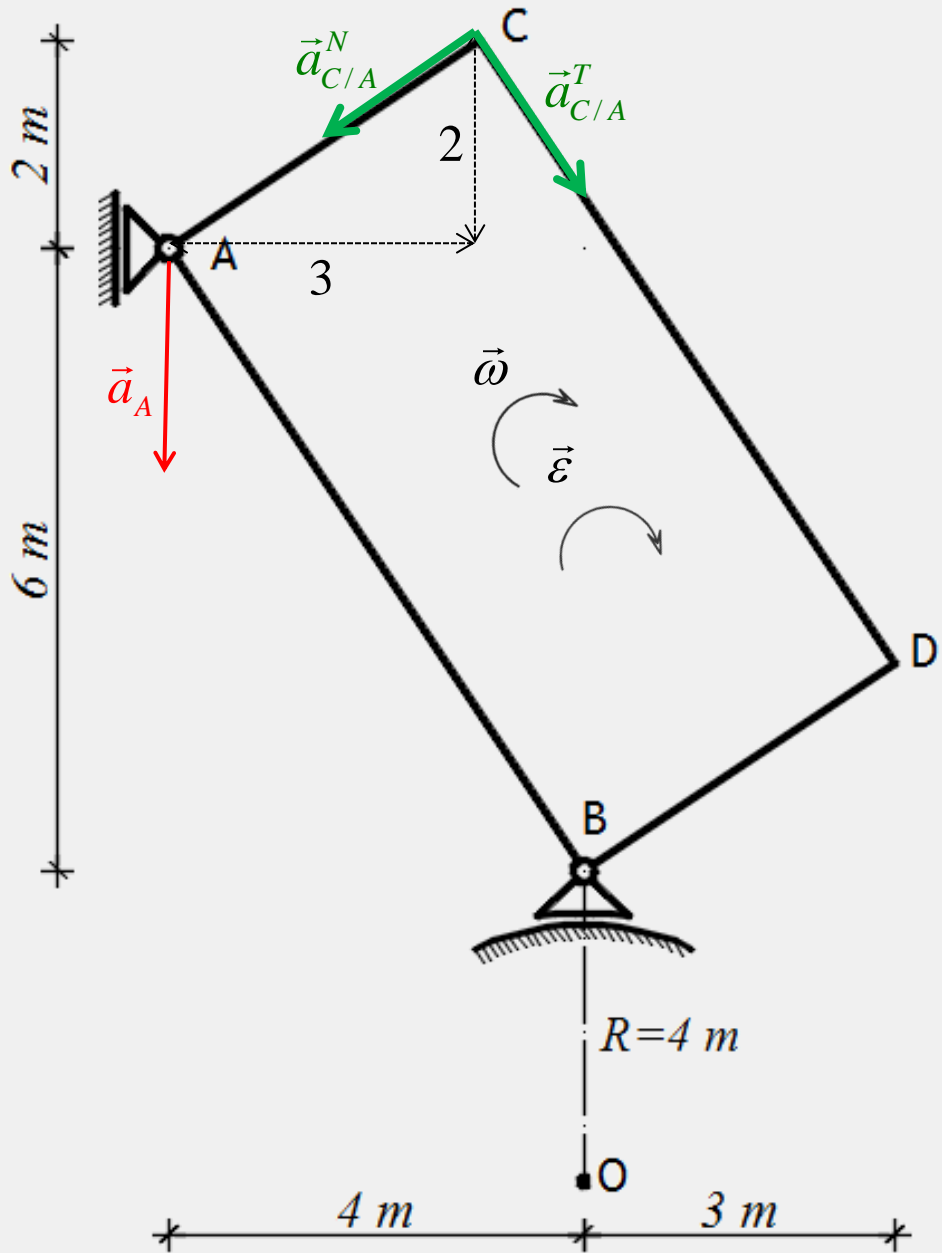


$$\vec{a}_C = \vec{a}_A + \vec{a}_{C/A}^N + \vec{a}_{C/A}^T$$

$$\vec{a}_C = -7\vec{j} - 3\omega^2\vec{i} - 2\omega^2\vec{j}$$

# BRZINE

## Ubrzanje točke C

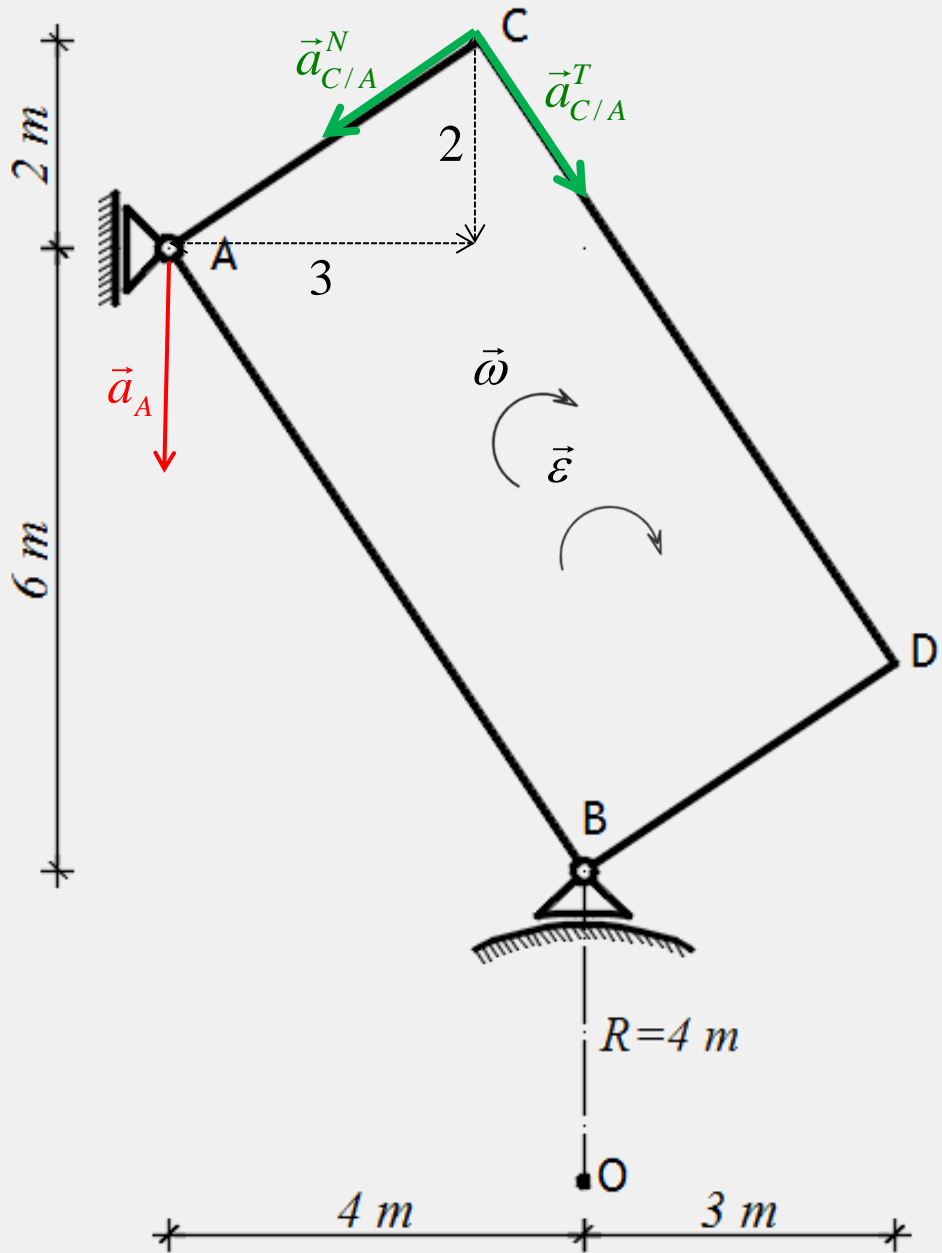


$$\vec{a}_C = \vec{a}_A + \vec{a}_{C/A}^N + \vec{a}_{C/A}^T$$

$$\vec{a}_C = -7\vec{j} - 3\omega^2\vec{i} - 2\omega^2\vec{j}$$

# BRZINE

## Ubrzanje točke C

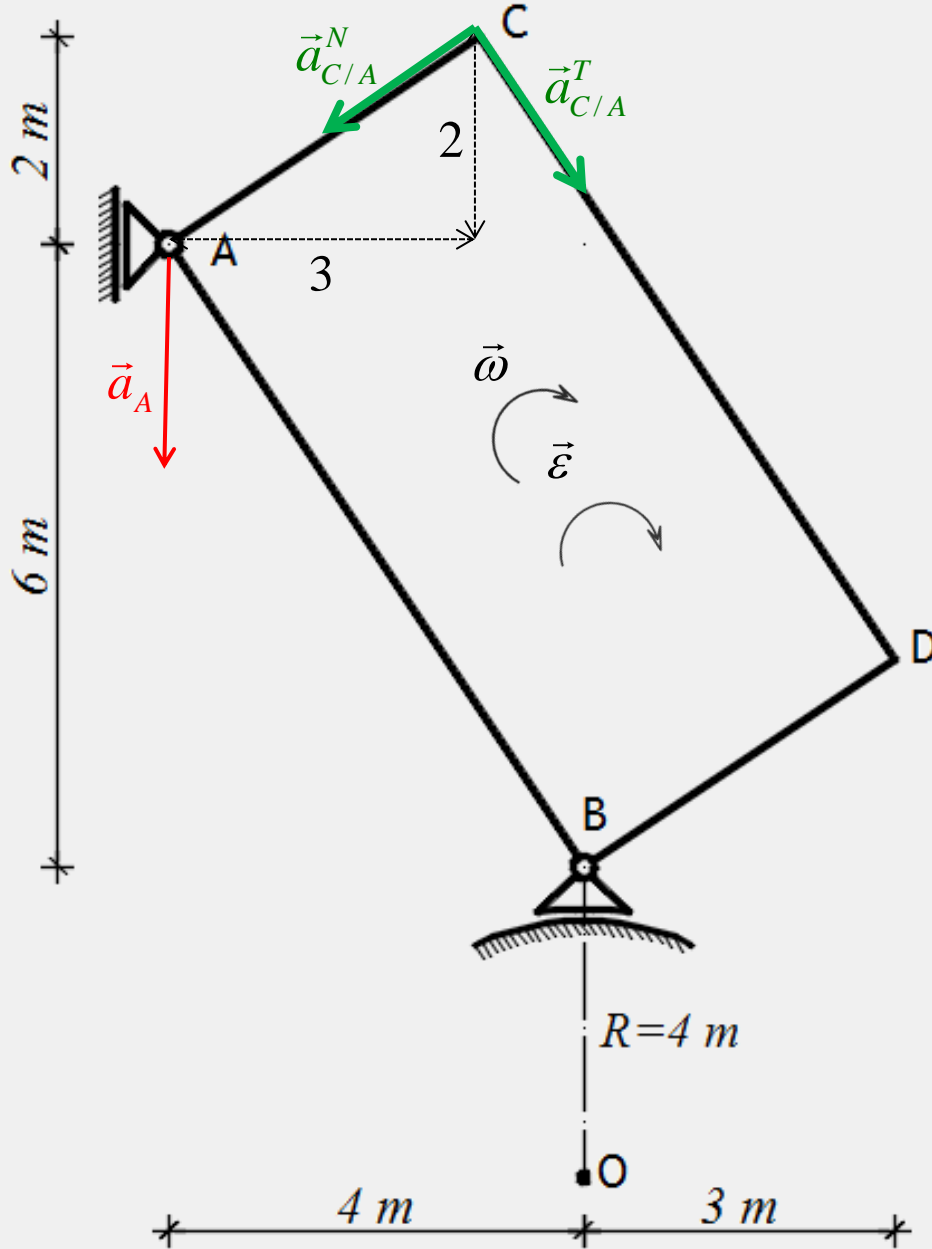


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## Ubrzanje točke C



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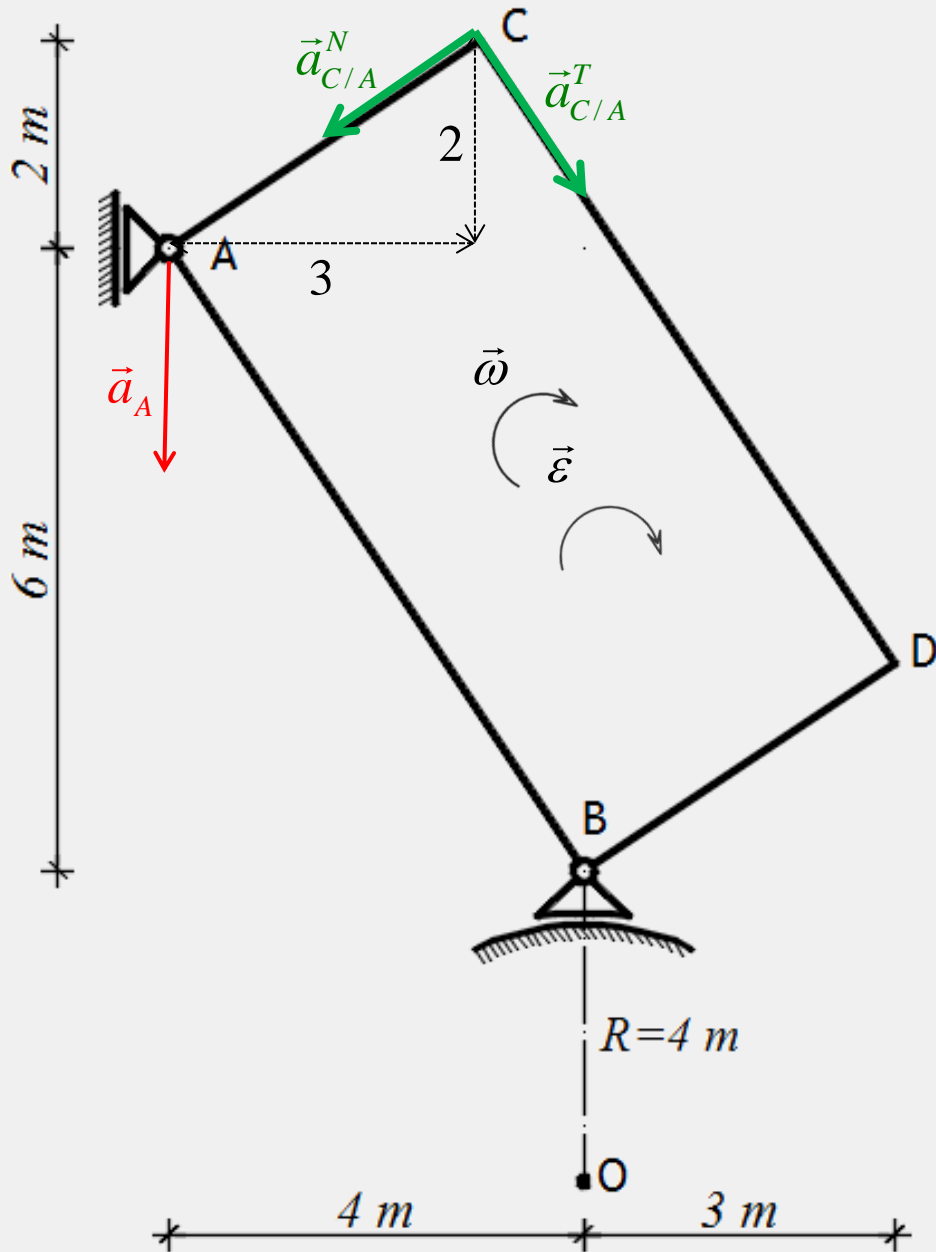
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$$\vec{a}_C = \vec{i} - 15\vec{j}$$



# BRZINE

## Ubrzanje točke C



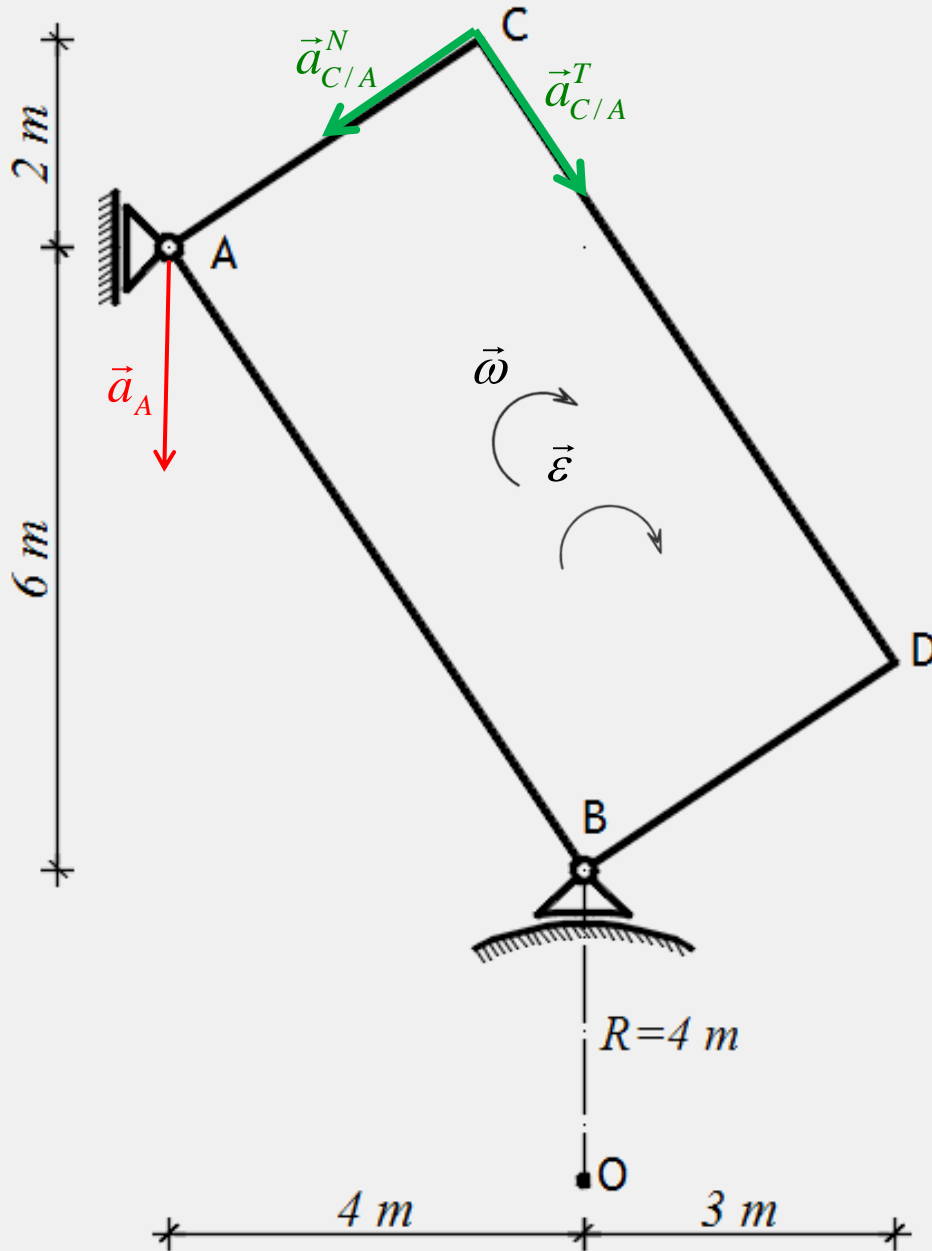
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$$a_C = \sqrt{1^2 + 15^2} = 15,03\text{ m/s}^2$$

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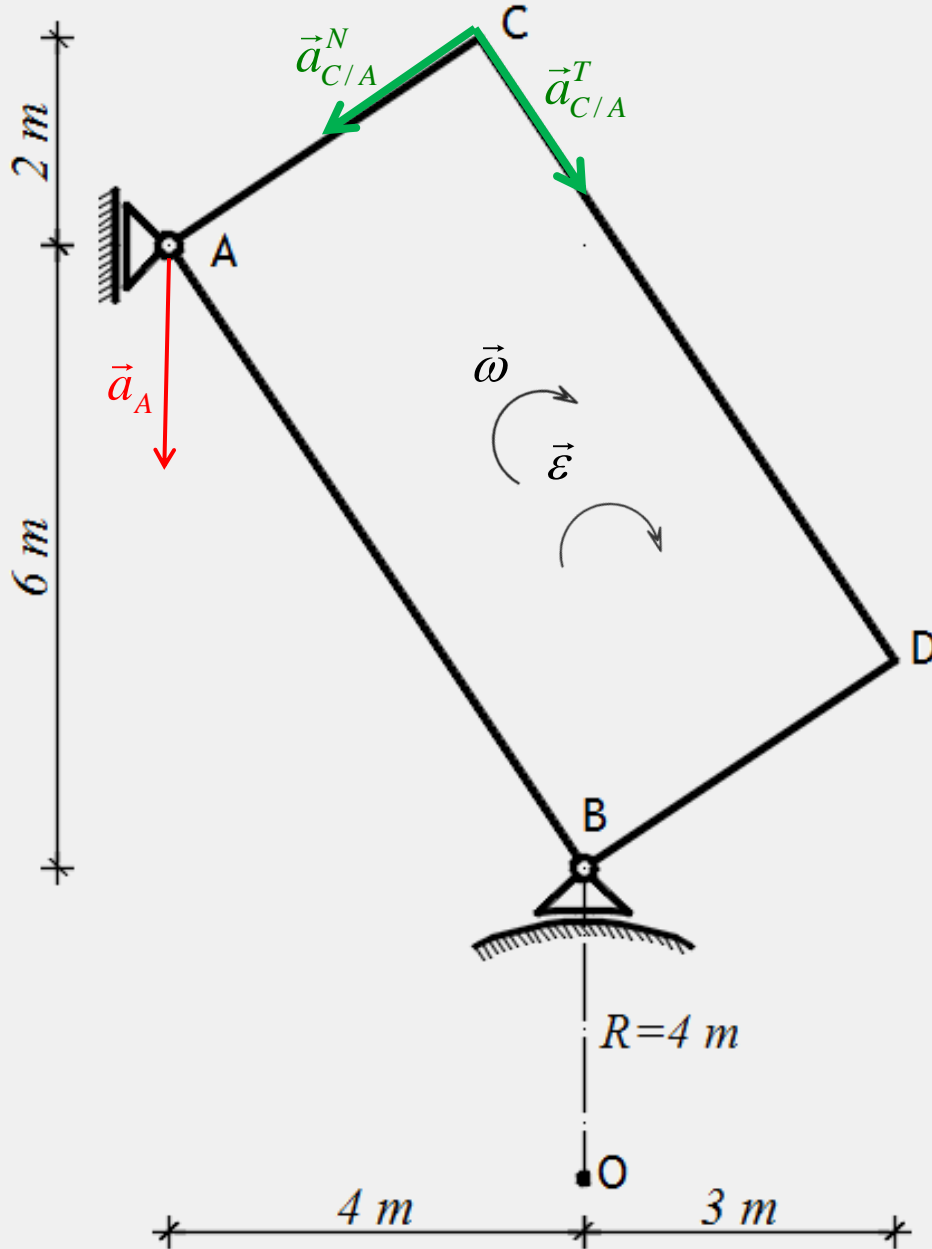
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## Ubrzanje točke D

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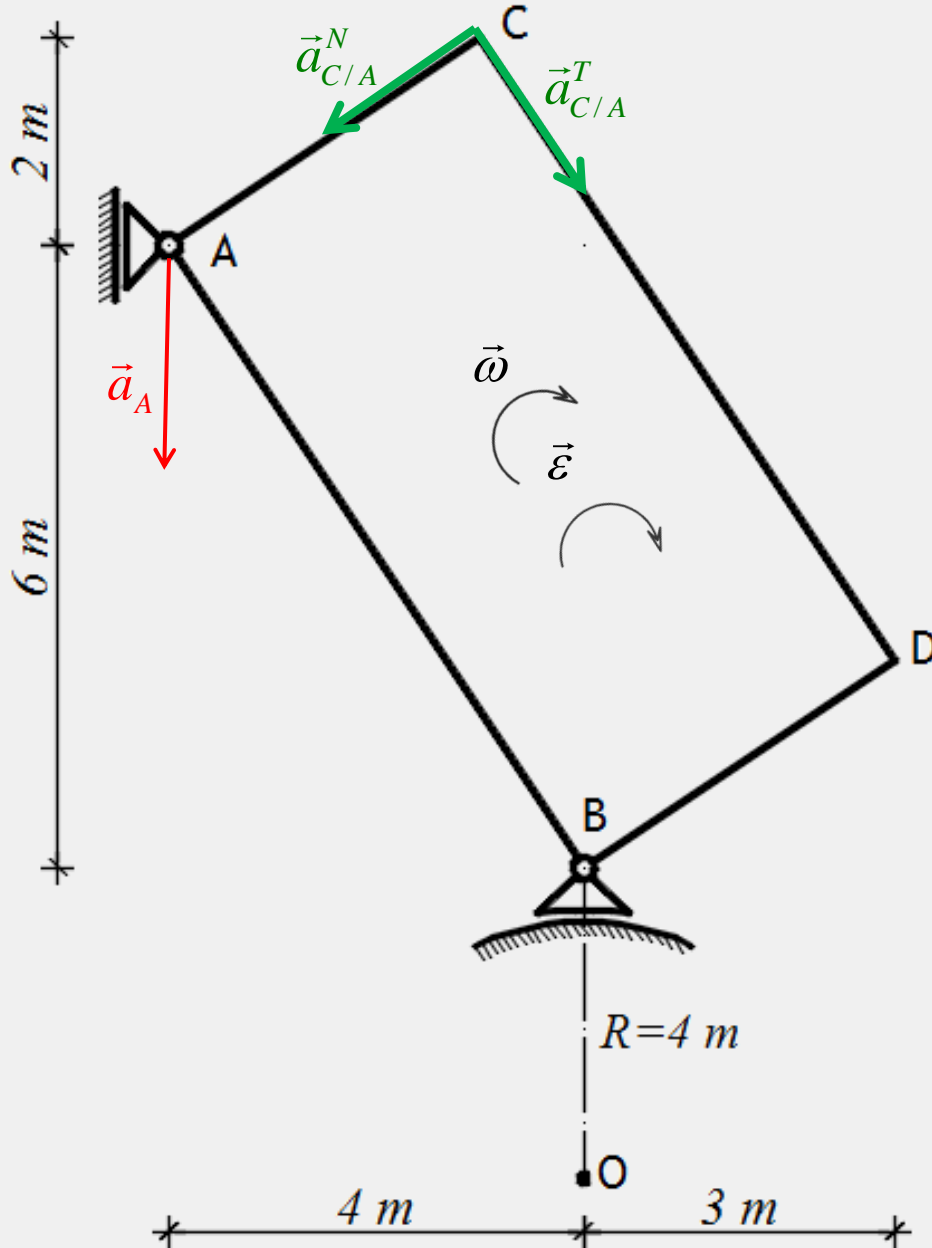
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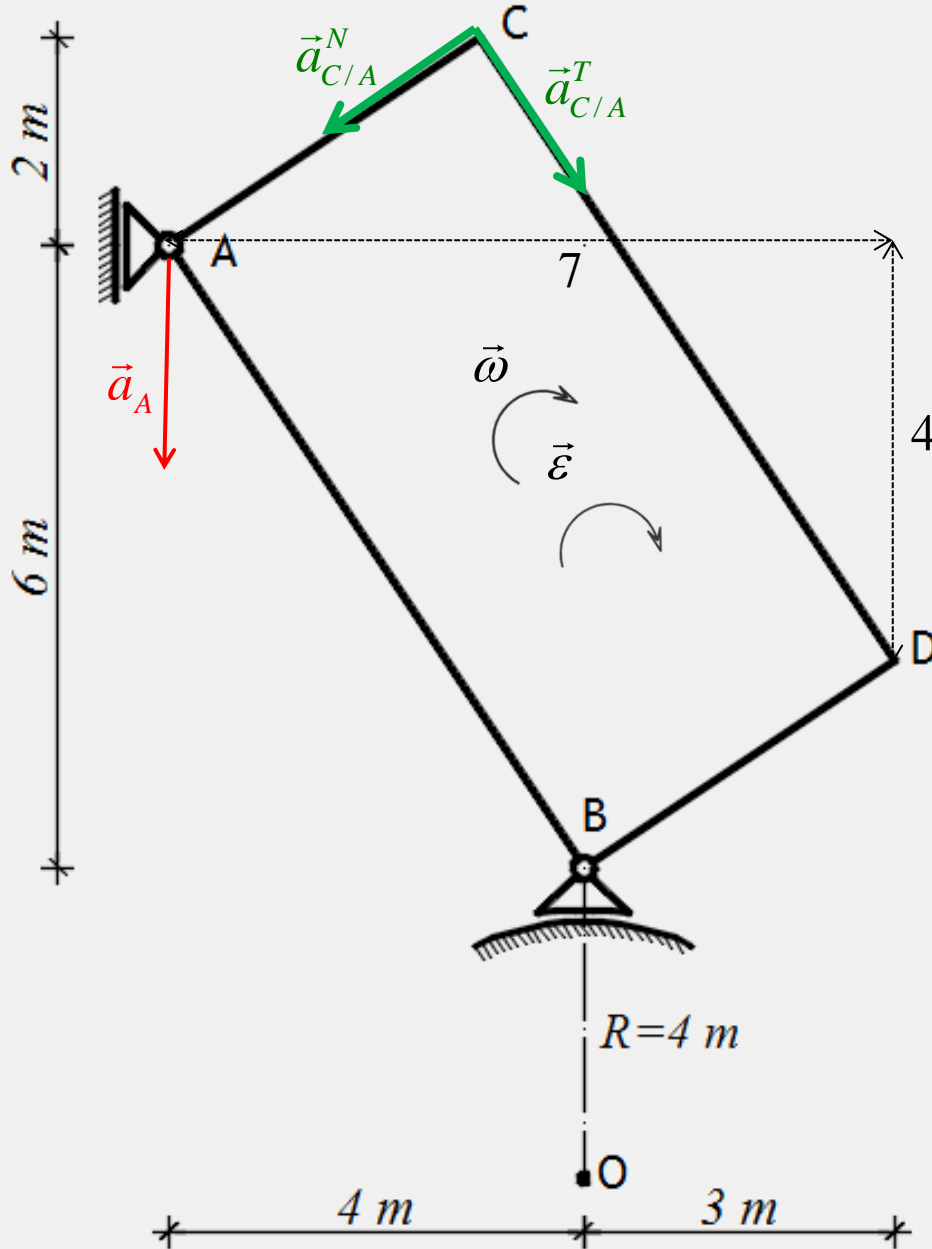
$$\vec{a}_D = \vec{a}_A + \vec{a}_{D/A}^N + \vec{a}_{D/A}^T$$

$$\vec{a}_D = -7\vec{j}$$



# BRZINE

## Ubrzanje točke C



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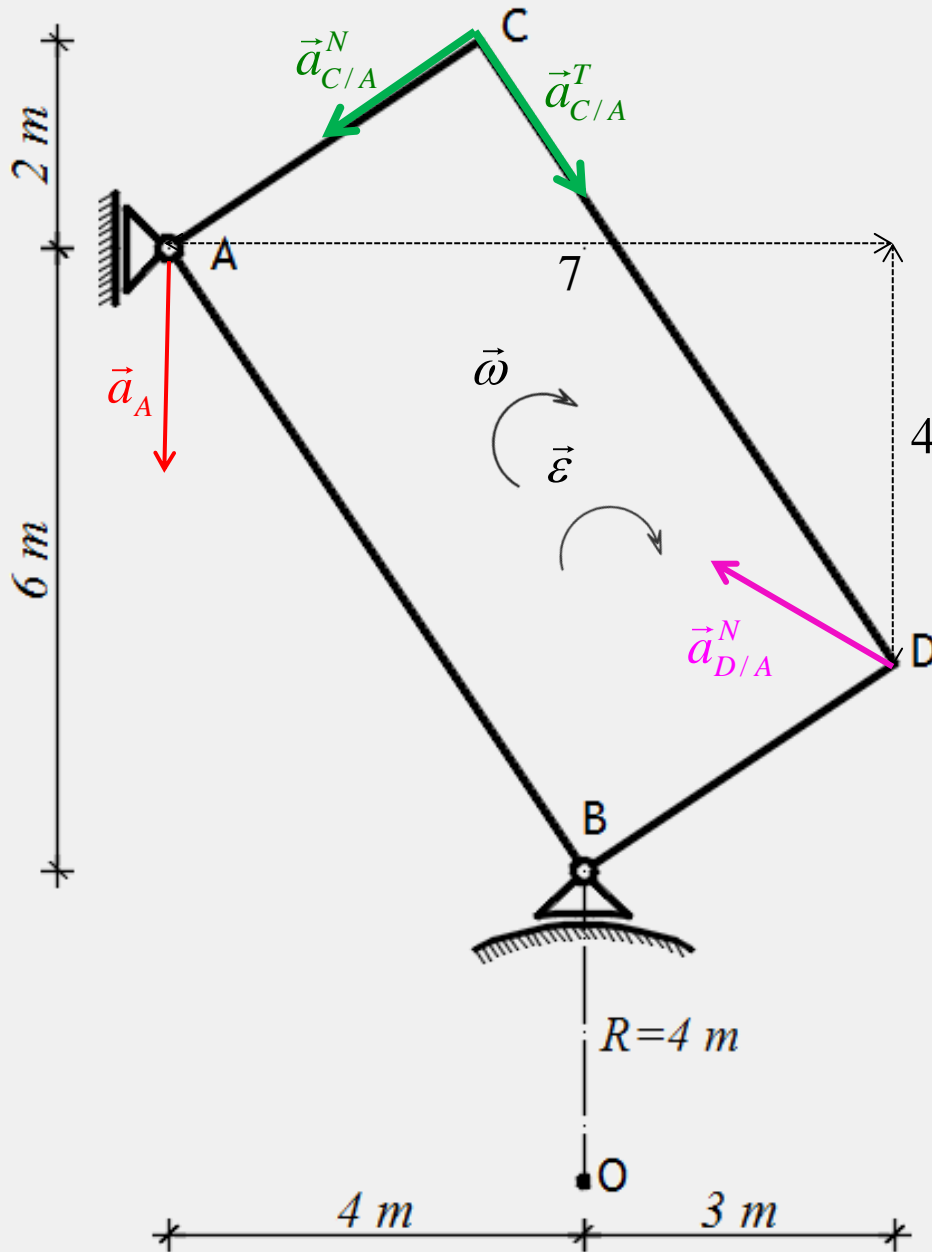
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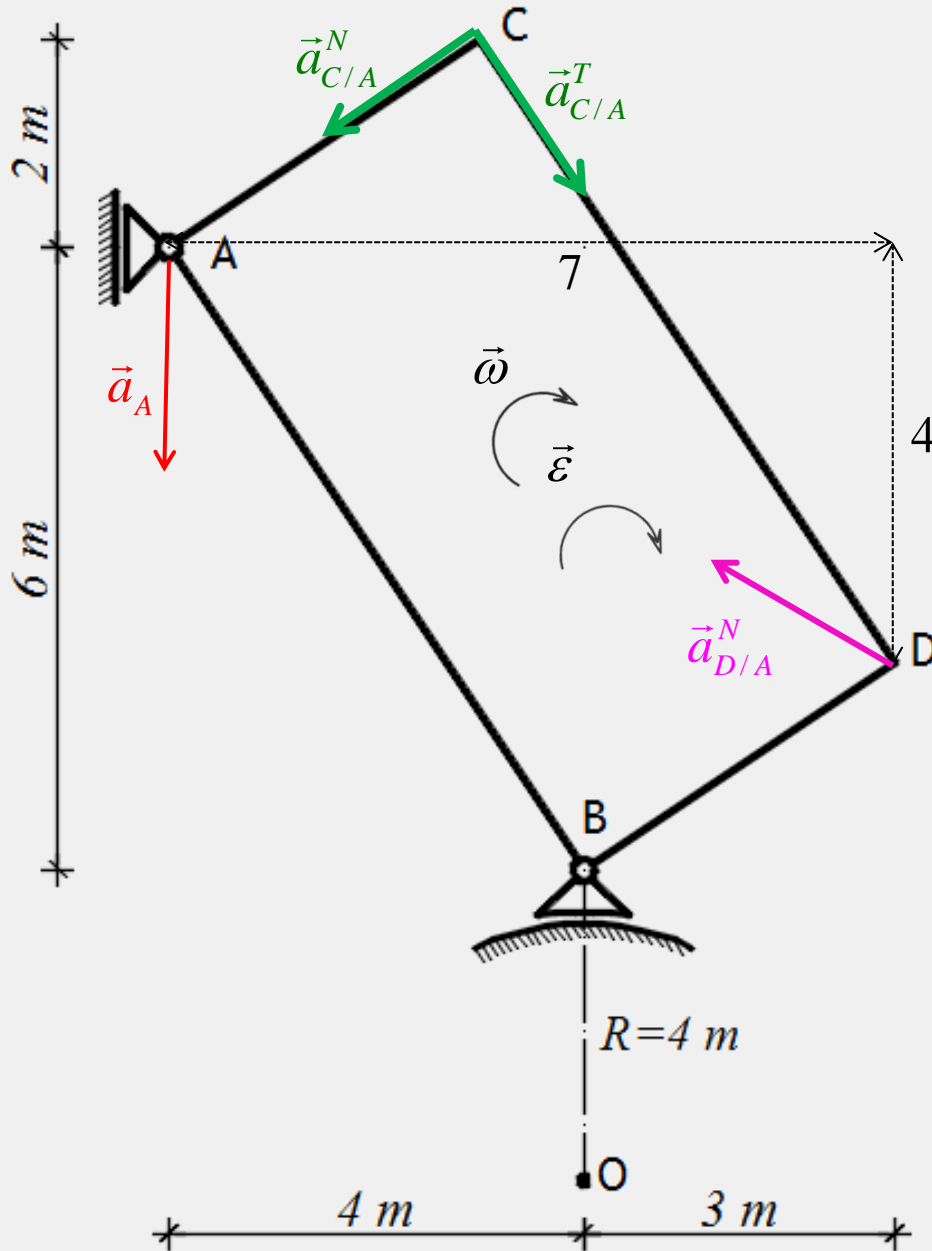
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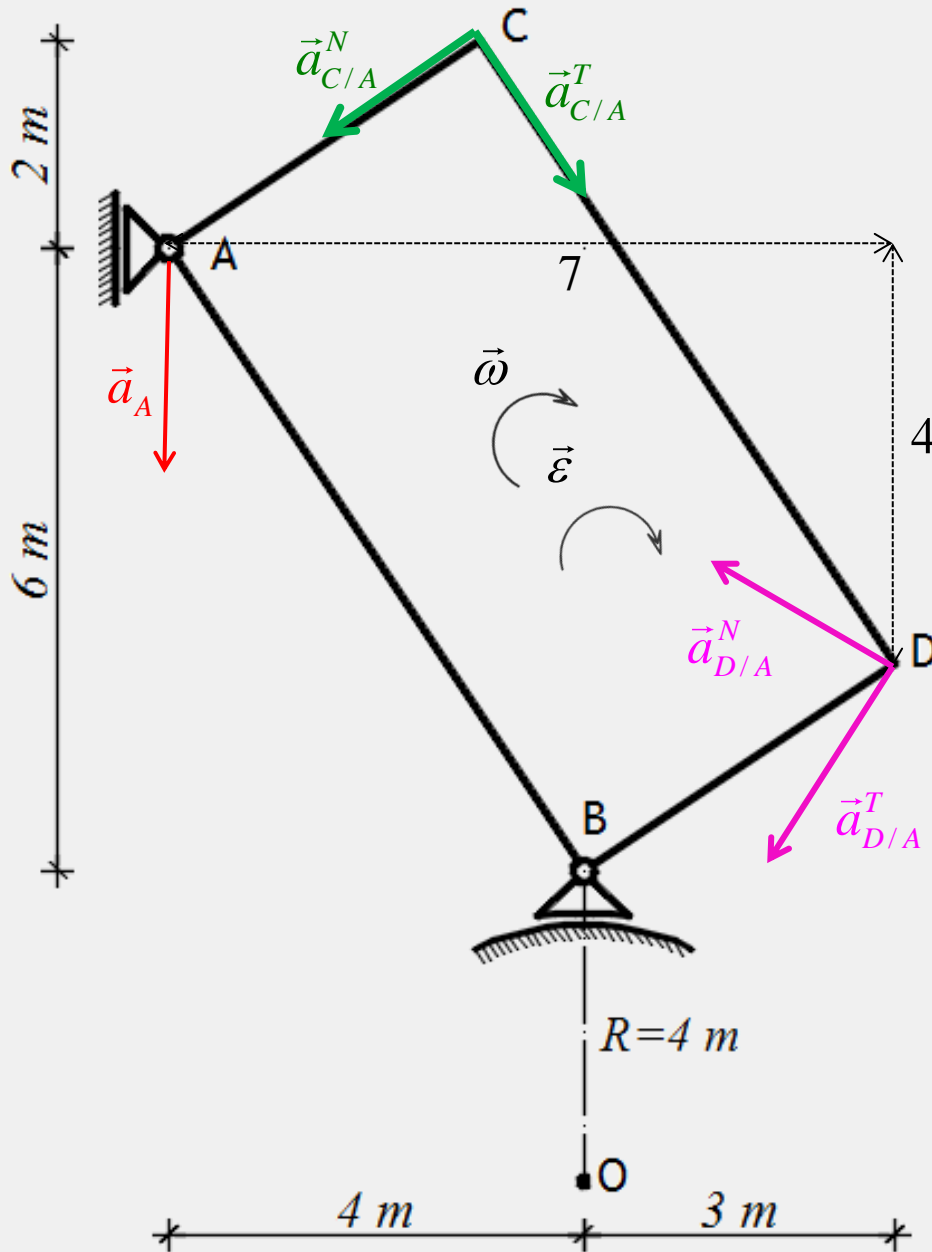
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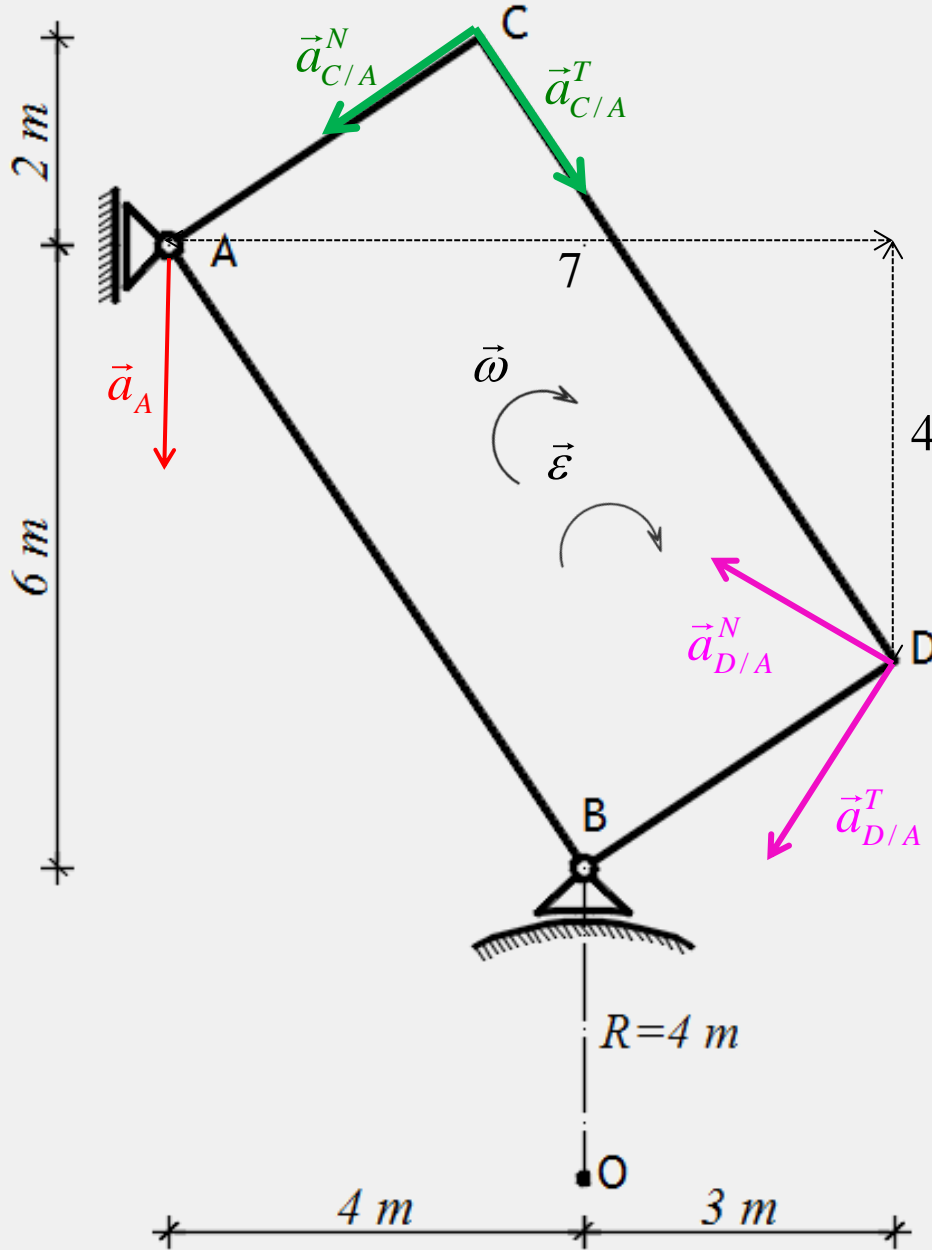
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# BRZINE

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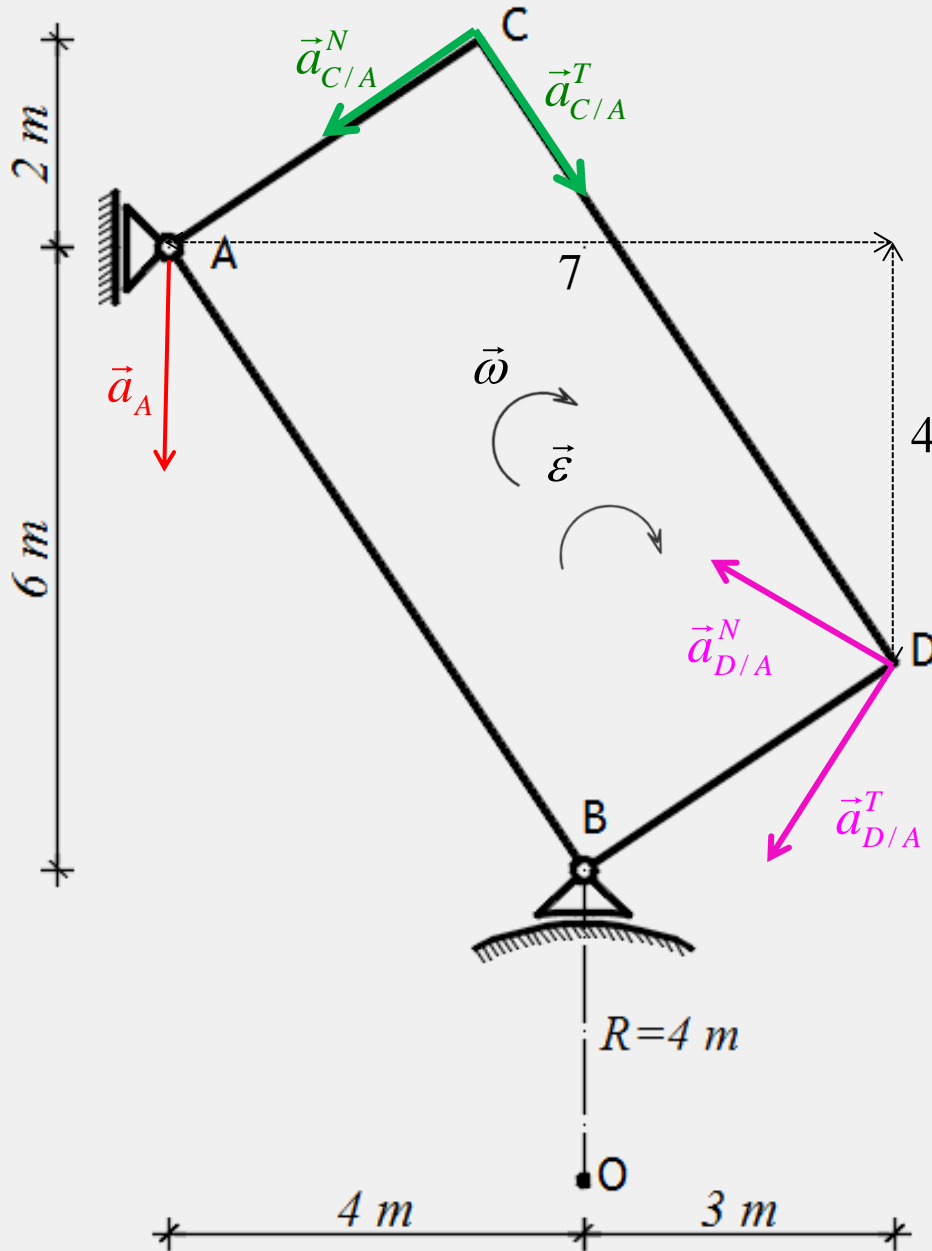
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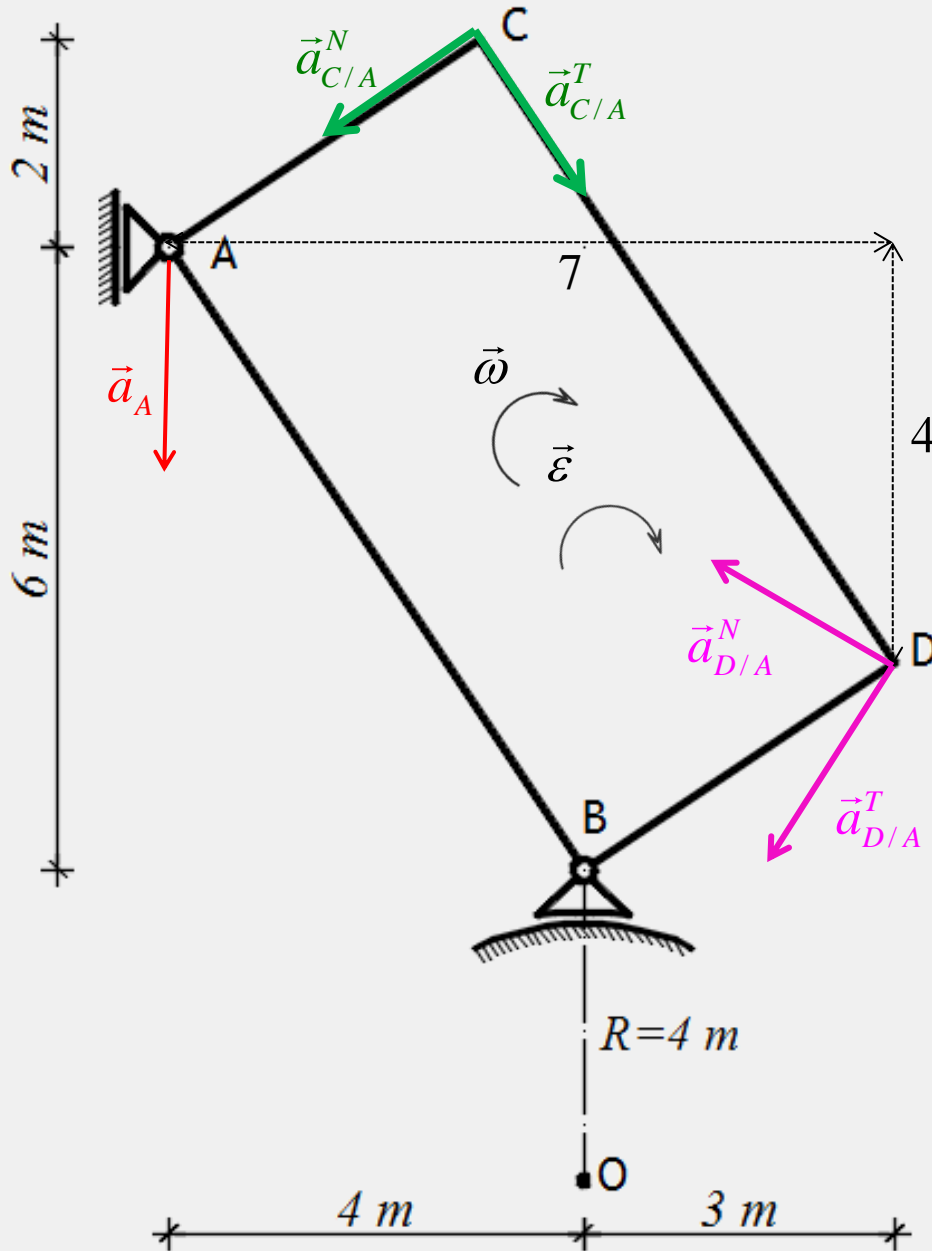
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## Ubrzanje točke C



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$$a_D = \sqrt{15^2 + 17^2} = 22,67\text{ m/s}^2$$