Seminari 2

Matematičke metode za informatičare

Damir Horvat

FOI, Varaždin

Sadržaj

prvi zadatak

drugi zadatak

treći zadatak

četvrti zadatak

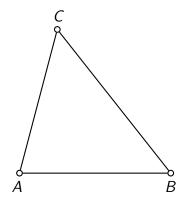
peti zadatak

prvi zadatak

Točka D leži na stranici \overline{BC} trokuta ABC i dijeli tu stranicu u omjeru

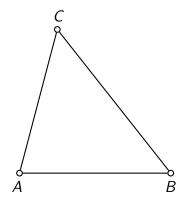
2 : 3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .

Točka D leži na stranici \overline{BC} trokuta ABC i dijeli tu stranicu u omjeru 2 : 3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .



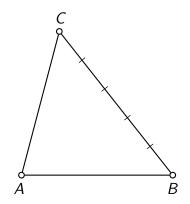
Točka D leži na stranici BC trokuta ABC i dijeli tu stranicu u omjeru
→ → →

2 : 3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .



$$|BD|: |CD| = 2:3$$

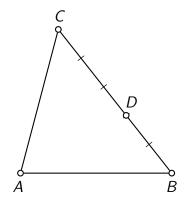
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$$|BD|: |CD| = 2:3$$

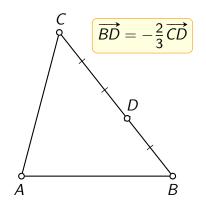
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$$|BD|: |CD| = 2:3$$

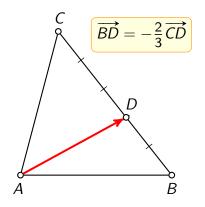
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$$|BD|: |CD| = 2:3$$

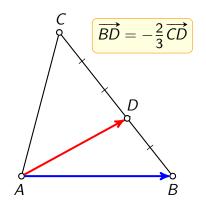
Točka D leži na stranici \overline{BC} trokuta ABC i dijeli tu stranicu u omjeru

2 : 3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .



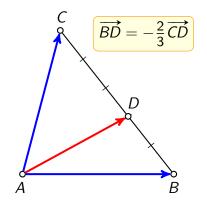
$$|BD|: |CD| = 2:3$$

Točka D leži na stranici \overrightarrow{BC} trokuta ABC i dijeli tu stranicu u omjeru 2:3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .



$$|BD|: |CD| = 2:3$$

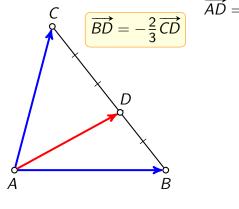
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$$|BD| : |CD| = 2 : 3$$

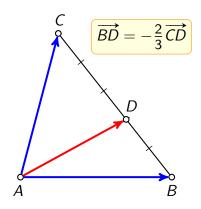
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Rješenje



Točka D leži na stranici \overrightarrow{BC} trokuta ABC i dijeli tu stranicu u omjeru 2:3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .

Rješenje

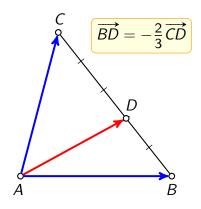


$$\overrightarrow{AD} = \overrightarrow{AB}$$

Točka D leži na stranici \overline{BC} trokuta ABC i dijeli tu stranicu u omjeru

2 : 3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .

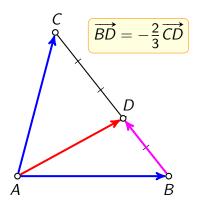
Rješenje



$$\overrightarrow{AD} = \overrightarrow{AB} +$$

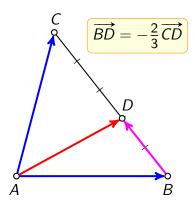
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Rješenje



$$\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD}$$

Točka D leži na stranici \overrightarrow{BC} trokuta ABC i dijeli tu stranicu u omjeru 2:3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .

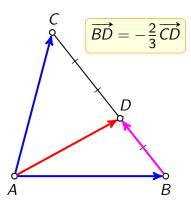


$$\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD} = \overrightarrow{AB} +$$

$$|BD|: |CD| = 2:3$$

Točka D leži na stranici \overline{BC} trokuta ABC i dijeli tu stranicu u omjeru 2:3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .

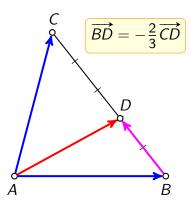
Rješenje



$$\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD} = \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BC}$$

Točka D leži na stranici \overrightarrow{BC} trokuta ABC i dijeli tu stranicu u omjeru 2:3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .

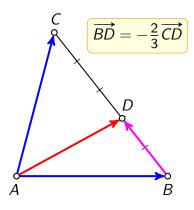
Rješenje



$$\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD} = \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BC} =$$

$$= \overrightarrow{AB} +$$

Točka D leži na stranici \overline{BC} trokuta ABC i dijeli tu stranicu u omjeru 2:3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .



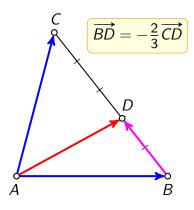
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$$= \overrightarrow{AB} + \frac{2}{5}\Big($$

$$|BD|: |CD| = 2:3$$

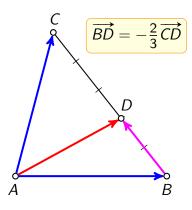
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Rješenje



$$\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD} = \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BC} =$$
$$= \overrightarrow{AB} + \frac{2}{5}\left(\overrightarrow{BA}\right)$$

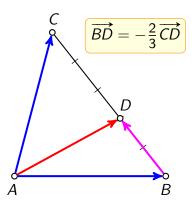
Točka D leži na stranici \overline{BC} trokuta ABC i dijeli tu stranicu u omjeru 2:3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .



$$\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD} = \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BC} =$$
$$= \overrightarrow{AB} + \frac{2}{5}\left(\overrightarrow{BA} + \frac{2}{5}\overrightarrow{BC} + \frac{2}$$

$$|BD|: |CD| = 2:3$$

Točka D leži na stranici \overrightarrow{BC} trokuta ABC i dijeli tu stranicu u omjeru 2 : 3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .

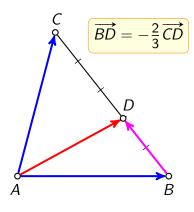


$$\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD} = \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BC} =$$
$$= \overrightarrow{AB} + \frac{2}{5}\left(\overrightarrow{BA} + \overrightarrow{AC}\right)$$

$$|BD|: |CD| = 2:3$$

Točka D leži na stranici \overline{BC} trokuta ABC i dijeli tu stranicu u omjeru 2:3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .

Rješenje



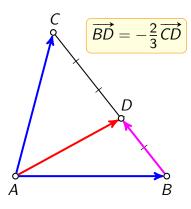
$$\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD} = \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BC} =$$

$$= \overrightarrow{AB} + \frac{2}{5}(\overrightarrow{BA} + \overrightarrow{AC}) =$$

$$= \overrightarrow{AB} +$$

Točka D leži na stranici \overline{BC} trokuta ABC i dijeli tu stranicu u omjeru 2:3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .

Rješenje



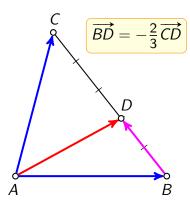
$$\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD} = \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BC} =$$

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$$= \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BA}$$

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Rješenje



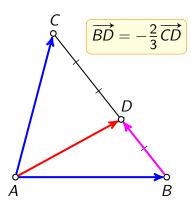
$$\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD} = \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BC} =$$

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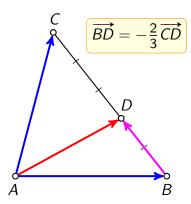
$$= \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BA} + \frac{2}{5}\overrightarrow{AC} =$$

$$= \overrightarrow{AB}$$

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Točka D leži na stranici \overline{BC} trokuta ABC i dijeli tu stranicu u omjeru 2:3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .

Rješenje



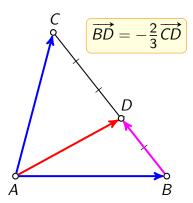
$$\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD} = \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BC} =$$

$$= \overrightarrow{AB} + \frac{2}{5}(\overrightarrow{BA} + \overrightarrow{AC}) =$$

$$= \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BA} + \frac{2}{5}\overrightarrow{AC} =$$

$$= \overrightarrow{AB} - \frac{2}{5}\overrightarrow{AB}$$

Točka D leži na stranici \overrightarrow{BC} trokuta ABC i dijeli tu stranicu u omjeru 2:3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .



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$$= \overrightarrow{AB} + \frac{2}{5}\left(\overrightarrow{BA} + \overrightarrow{AC}\right) =$$

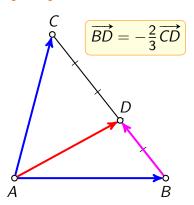
$$= \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BA} + \frac{2}{5}\overrightarrow{AC} =$$

$$= \overrightarrow{AB} - \frac{2}{5}\overrightarrow{AB} + \frac{2}{5}\overrightarrow{AC}$$

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Točka D leži na stranici \overline{BC} trokuta ABC i dijeli tu stranicu u omjeru 2:3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .

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$$\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD} = \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BC} =$$

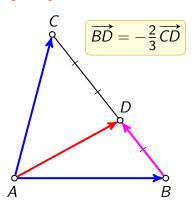
$$= \overrightarrow{AB} + \frac{2}{5}\left(\overrightarrow{BA} + \overrightarrow{AC}\right) =$$

$$= \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BA} + \frac{2}{5}\overrightarrow{AC} =$$

$$= \overrightarrow{AB} - \frac{2}{5}\overrightarrow{AB} + \frac{2}{5}\overrightarrow{AC} =$$

$$= \frac{3}{5}\overrightarrow{AB}$$

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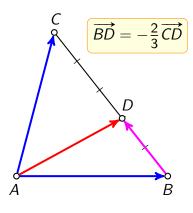
$$= \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BA} + \frac{2}{5}\overrightarrow{AC} =$$

$$= \overrightarrow{AB} - \frac{2}{5}\overrightarrow{AB} + \frac{2}{5}\overrightarrow{AC} =$$

$$= \frac{3}{5}\overrightarrow{AB} + \frac{2}{5}\overrightarrow{AC}$$

$$|BD| : |CD| = 2 : 3$$

Točka D leži na stranici \overline{BC} trokuta ABC i dijeli tu stranicu u omjeru 2 : 3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .



$$|BD|: |CD| = 2:3$$

$$\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD} = \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BC} =$$

$$= \overrightarrow{AB} + \frac{2}{5}(\overrightarrow{BA} + \overrightarrow{AC}) =$$

$$= \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BA} + \frac{2}{5}\overrightarrow{AC} =$$

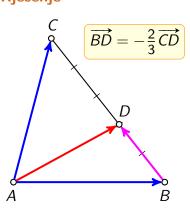
$$= \overrightarrow{AB} - \frac{2}{5}\overrightarrow{AB} + \frac{2}{5}\overrightarrow{AC} =$$

$$= \frac{3}{5}\overrightarrow{AB} + \frac{2}{5}\overrightarrow{AC}$$

$$\overrightarrow{AD} = \frac{3}{5}\overrightarrow{AB} + \frac{2}{5}\overrightarrow{AC}$$

Točka D leži na stranici \overrightarrow{BC} trokuta ABC i dijeli tu stranicu u omjeru 2 : 3. Prikažite vektor \overrightarrow{AD} kao linearnu kombinaciju vektora \overrightarrow{AB} i \overrightarrow{AC} .

Rješenje



|BD| : |CD| = 2 : 3

$$\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD} = \overrightarrow{AB} + \frac{2}{5}\overrightarrow{BC} =$$

$$= \overrightarrow{AB} + \frac{2}{5} \left(\overrightarrow{BA} + \overrightarrow{AC} \right) =$$

$$= \overrightarrow{AB} + \frac{2}{5} \overrightarrow{BA} + \frac{2}{5} \overrightarrow{AC} =$$

$$= \overrightarrow{AB} - \frac{2}{5} \overrightarrow{AB} + \frac{2}{5} \overrightarrow{AC} =$$

$$= \frac{3}{5} \overrightarrow{AB} + \frac{2}{5} \overrightarrow{AC}$$

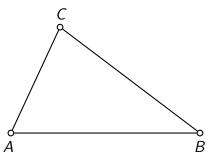
 $\overrightarrow{AD} = \frac{3}{5}\overrightarrow{AB} + \frac{2}{5}\overrightarrow{AC}$

drugi zadatak

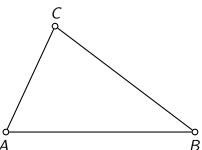
Na stranici \overline{BC} trokuta ABC zadana je točka M takva da je $|BM| = \frac{2}{3}|BC|$ i točka N na stranici \overline{AC} takva da je |CA| = 4|CN|.

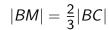
Neka je S presjek dužina \overline{AM} i \overline{BN} . Nadite omjere u kojima točka S

dijeli dužine \overline{AM} i \overline{BN} .

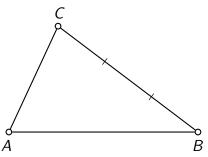






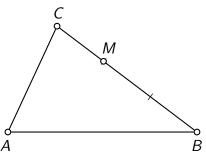




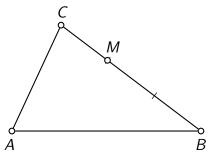


$$|BM| = \frac{2}{3}|BC|$$

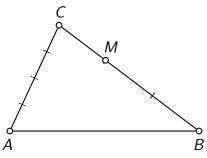




$$|BM| = \frac{2}{3}|BC|$$

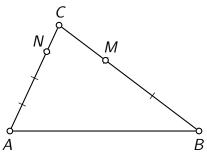


$$|BM| = \frac{2}{3}|BC|$$
$$|CA| = 4|CN|$$

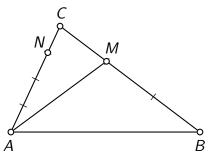


$$|BM| = \frac{2}{3}|BC|$$
$$|CA| = 4|CN|$$



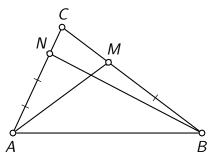


$$|BM| = \frac{2}{3}|BC|$$

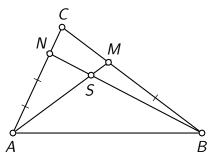


$$|BM| = \frac{2}{3}|BC|$$
$$|CA| = 4|CN|$$

$$CA|=4|CN|$$



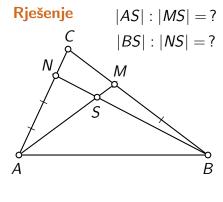
$$|BM| = \frac{2}{3}|BC|$$
$$|CA| = 4|CN|$$



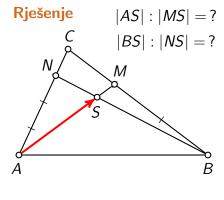
$$|BM| = \frac{2}{3}|BC|$$
$$|CA| = 4|CN|$$

Rješenje
$$|AS|:|MS|=?$$
 A
 B

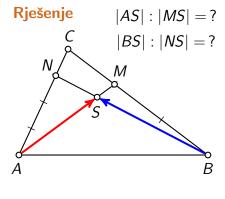
$$|BM| = \frac{2}{3}|BC|$$
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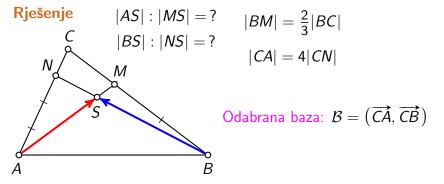
$$|BM| = \frac{2}{3}|BC|$$
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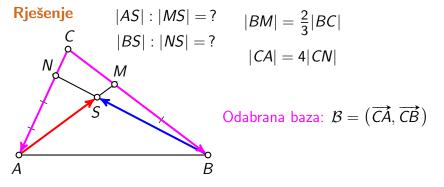
$$|BM| = \frac{2}{3}|BC|$$
$$|CA| = 4|CN|$$

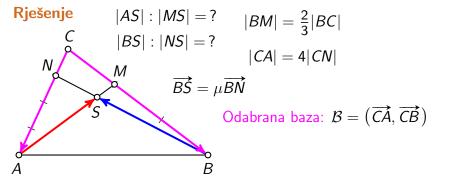


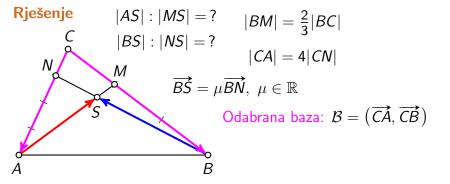
$$|BM| = \frac{2}{3}|BC|$$
$$|CA| = 4|CN|$$



Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN|$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$







Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN|$ $|BS|: |NS| = ?$ $|CA| = 4|CN|$ $|BS| = \mu |BN|, \mu \in \mathbb{R}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$

$$\overrightarrow{BS} = \mu \overrightarrow{BN}$$

Rješenje
$$|AS|:|MS|=?$$
 $|BM|=\frac{2}{3}|BC|$ $|BS|:|NS|=?$ $|CA|=4|CN|$ $|BS|=\frac{1}{3}|BN|$, $\mu\in\mathbb{R}$ Odabrana baza: $\mathcal{B}=(\overrightarrow{CA},\overrightarrow{CB})$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\right.$$

Rješenje
$$|AS|:|MS|=?$$
 $|BM|=\frac{2}{3}|BC|$ $|BS|:|NS|=?$ $|CA|=4|CN|$ $|BS|=\frac{1}{3}|BC|$ Odabrana baza: $\mathcal{B}=(\overrightarrow{CA},\overrightarrow{CB})$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} \right)$$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$

$$|BS|: |NS| = ?$$

$$|CA| = 4|CN|$$

$$\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$$
Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$

$$\overrightarrow{\mathit{BS}} = \mu \overrightarrow{\mathit{BN}} = \mu \left(\overrightarrow{\mathit{BC}} + \right)$$

Rješenje
$$|AS|:|MS|=?$$
 $|BM|=\frac{2}{3}|BC|$ $|BS|:|NS|=?$ $|CA|=4|CN|$ $|BS|=\frac{1}{3}|BC|$ $|CA|=\frac{1}{3}|BC|$ $|CA|=\frac{1}{3}|BC|$ Odabrana baza: $\mathcal{B}=(\overrightarrow{CA},\overrightarrow{CB})$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN} \right)$$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|BS|: |NS| = ?$ $|CA| = 4|CN|$ $|BS| = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN} \right) = \mu \left($$

Rješenje
$$|AS|:|MS|=?$$
 $|BM|=\frac{2}{3}|BC|$ $|BS|:|NS|=?$ $|CA|=4|CN|$ $|BS|=\frac{1}{3}|BC|$ $|CA|=\frac{1}{3}|BC|$ $|CA|=\frac{1}{3}|BC|$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN} \right) = \mu \left(-\overrightarrow{CB} \right)$$

Rješenje
$$|AS|:|MS|=?$$
 $|BM|=\frac{2}{3}|BC|$ $|BS|:|NS|=?$ $|CA|=4|CN|$ $|BS|=\frac{1}{3}|BC|$ Odabrana baza: $\mathcal{B}=(\overrightarrow{CA},\overrightarrow{CB})$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN} \right) = \mu \left(-\overrightarrow{CB} + \overrightarrow{CN} \right)$$

Rješenje
$$|AS|:|MS|=?$$
 $|BM|=\frac{2}{3}|BC|$ $|BS|:|NS|=?$ $|CA|=4|CN| \longrightarrow \overrightarrow{CN}=\frac{1}{4}\overrightarrow{CA}$ $\overrightarrow{BS}=\mu\overrightarrow{BN},\ \mu\in\mathbb{R}$ Odabrana baza: $\mathcal{B}=(\overrightarrow{CA},\overrightarrow{CB})$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN} \right) = \mu \left(-\overrightarrow{CB} + \overrightarrow{CN} \right)$$

Rješenje
$$|AS|:|MS|=?$$
 $|BM|=\frac{2}{3}|BC|$ $|BS|:|NS|=?$ $|CA|=4|CN| \longrightarrow \overrightarrow{CN}=\frac{1}{4}\overrightarrow{CA}$ $\overrightarrow{BS}=\mu\overrightarrow{BN},\ \mu\in\mathbb{R}$ Odabrana baza: $\mathcal{B}=(\overrightarrow{CA},\overrightarrow{CB})$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN} \right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA} \right)$$

Rješenje
$$|AS|:|MS|=?$$
 $|BM|=\frac{2}{3}|BC|$ $|BS|:|NS|=?$ $|CA|=4|CN| \longrightarrow \overrightarrow{CN}=\frac{1}{4}\overrightarrow{CA}$ $\overrightarrow{BS}=\mu\overrightarrow{BN},\ \mu\in\mathbb{R}$ Odabrana baza: $\mathcal{B}=(\overrightarrow{CA},\overrightarrow{CB})$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN} \right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA} \right) = \frac{\mu}{4}\overrightarrow{CA}$$

Rješenje
$$|AS|:|MS|=?$$
 $|BM|=\frac{2}{3}|BC|$ $|BS|:|NS|=?$ $|CA|=4|CN| \longrightarrow \overrightarrow{CN}=\frac{1}{4}\overrightarrow{CA}$ $\overrightarrow{BS}=\mu\overrightarrow{BN},\ \mu\in\mathbb{R}$ Odabrana baza: $\mathcal{B}=(\overrightarrow{CA},\overrightarrow{CB})$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN} \right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4} \overrightarrow{CA} \right) = \frac{\mu}{4} \overrightarrow{CA} - \mu \overrightarrow{CB}$$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $\overrightarrow{BS} = \mu\overrightarrow{BN}, \ \mu \in \mathbb{R}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN} \right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA} \right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CA| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CA| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CA| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = \frac{1}{4}\overrightarrow{CA} = \frac{1}{4}\overrightarrow{CA}$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN|$ www $\overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu (\overrightarrow{BC} + \overrightarrow{CN}) = \mu (-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu (\overrightarrow{BC} + \overrightarrow{CN}) = \mu (-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu (\overrightarrow{BC} + \overrightarrow{CN}) = \mu (-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $|\overrightarrow{BS}| = \mu \overrightarrow{BN} = \mu (\overrightarrow{BC} + \overrightarrow{CN}) = \mu (-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $|\overrightarrow{BS}| = |\overrightarrow{BA}|$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $|\overrightarrow{BS}| = \mu \overrightarrow{BN} = \mu (\overrightarrow{BC} + \overrightarrow{CN}) = \mu (-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $|\overrightarrow{BS}| = |\overrightarrow{BA}| + |\overrightarrow{BS}| = |\overrightarrow{BA}| + |\overrightarrow{CB}|$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $|\overrightarrow{BS}| = \mu \overrightarrow{BN} = \mu (\overrightarrow{BC} + \overrightarrow{CN}) = \mu (-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $|\overrightarrow{BS}| = |\overrightarrow{BA}| + |\overrightarrow{AS}|$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $|\overrightarrow{BS}| = \mu \overrightarrow{BN} = \mu (\overrightarrow{BC} + \overrightarrow{CN}) = \mu (-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $|\overrightarrow{BS}| = |\overrightarrow{BA}| + |\overrightarrow{AS}| = |\overrightarrow{BA}| + |\overrightarrow{AS}| = |\overrightarrow{BA}| + |\overrightarrow{AS}| = |\overrightarrow{BA}| + |\overrightarrow{AS}| = |\overrightarrow{AS}| = |\overrightarrow{AS}| = |\overrightarrow{AS}| + |\overrightarrow{AS}| = |\overrightarrow{AS}| = |\overrightarrow{AS}| + |\overrightarrow{AS}| +$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN}\right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}\right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $\overrightarrow{BS} = \overrightarrow{BA} + \overrightarrow{AS} = \overrightarrow{BC}$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN|$ www $\overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN}\right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}\right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $\overrightarrow{BS} = \overrightarrow{BA} + \overrightarrow{AS} = \overrightarrow{BC} +$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN}\right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}\right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $\overrightarrow{BS} = \overrightarrow{BA} + \overrightarrow{AS} = \overrightarrow{BC} + \overrightarrow{CA}$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN}\right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}\right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $\overrightarrow{BS} = \overrightarrow{BA} + \overrightarrow{AS} = \left(\overrightarrow{BC} + \overrightarrow{CA}\right)$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN}\right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}\right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $\overrightarrow{BS} = \overrightarrow{BA} + \overrightarrow{AS} = \left(\overrightarrow{BC} + \overrightarrow{CA}\right) +$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CA| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = \frac{1}{4}\overrightarrow{CA} = \frac{1}{4}\overrightarrow{CA}$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN|$ www $\overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN|$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $|\overrightarrow{BS}| = \mu \overrightarrow{BN} = \mu (\overrightarrow{BC} + \overrightarrow{CN}) = \mu (-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $|\overrightarrow{BS}| = |\overrightarrow{BA}| + |\overrightarrow{AS}| = (|\overrightarrow{BC}| + |\overrightarrow{CA}|) +$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN|$ www $\overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN|$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $|\overrightarrow{BS}| = \mu \overrightarrow{BN} = \mu (\overrightarrow{BC} + \overrightarrow{CN}) = \mu (-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $|\overrightarrow{BS}| = |\overrightarrow{BA}| + |\overrightarrow{AS}| = (|\overrightarrow{BC}| + |\overrightarrow{CA}|) + \lambda \overrightarrow{AM}$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN|$ www $\overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN|$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $|\overrightarrow{BS}| = \mu \overrightarrow{BN} = \mu (\overrightarrow{BC} + \overrightarrow{CN}) = \mu (-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $|\overrightarrow{BS}| = |\overrightarrow{BA}| + |\overrightarrow{AS}| = (|\overrightarrow{BC}| + |\overrightarrow{CA}|) + \lambda \overrightarrow{AM} =$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \xrightarrow{\text{constant}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 1$ $|CA|$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \xrightarrow{\text{constant}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 1$ $|CA|$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN|$ $|BS|: |NS| = ?$ $|CA| = 4|CN|$ $|CA| = \frac{1}{4}\overrightarrow{CA}$ $|CA| = \frac{1}{4}$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \xrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$ $|\overrightarrow{BS}| = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ $|\overrightarrow{AS}| = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$ Odabrana baza: $|B| = (\overrightarrow{CA}, \overrightarrow{CB})$ $|B| = \mu |B| = \mu |B|$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \xrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$ $|\overrightarrow{BS}| = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ $|\overrightarrow{AS}| = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$ Odabrana baza: $|B| = (\overrightarrow{CA}, \overrightarrow{CB})$ $|B| = \mu \overrightarrow{BN} = \mu (|B|\overrightarrow{CA}| + |C|\overrightarrow{CB}| + |A|\overrightarrow{CA}|) = \mu \overrightarrow{CA} - \mu \overrightarrow{CB}$ $|B| = |B| = |B| + |B| + |B| = |B| + |B| +$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN|$ www $\overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN|$ www $\overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN|$ do $|CA| = 4|CN|$ where $|CA| = 4|CA|$ $|CA| = 4|CA|$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN|$ www $\overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ $\overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN}\right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}\right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $\overrightarrow{BS} = \overrightarrow{BA} + \overrightarrow{AS} = \left(\overrightarrow{BC} + \overrightarrow{CA}\right) + \lambda \overrightarrow{AM} =$ $= -\overrightarrow{CB} + \overrightarrow{CA} + \lambda \left(\overrightarrow{AC} + \overrightarrow{CM}\right) = -\overrightarrow{CB} + \overrightarrow{CA} - \lambda \overrightarrow{CA} + \lambda \overrightarrow{CM}$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN|$ www $\overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN|$ www $\overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN|$ www $|CA| = \frac{1}{4}\overrightarrow{CA}$ $|CA| = 4|CN|$ www $|CA| = \frac{1}{4}\overrightarrow{CA}$ $|CA|$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN|$ www $\overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ $\overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN}\right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}\right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $\overrightarrow{BS} = \overrightarrow{BA} + \overrightarrow{AS} = \left(\overrightarrow{BC} + \overrightarrow{CA}\right) + \lambda \overrightarrow{AM} =$ $= -\overrightarrow{CB} + \overrightarrow{CA} + \lambda \left(\overrightarrow{AC} + \overrightarrow{CM}\right) = -\overrightarrow{CB} + \overrightarrow{CA} - \lambda \overrightarrow{CA} + \lambda \overrightarrow{CM} =$ $= (1 - \lambda)\overrightarrow{CA}$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN| \xrightarrow{C} \overrightarrow{C} \overrightarrow{N} = \frac{1}{4}\overrightarrow{C}\overrightarrow{A}$ $|CA| = 4|CN| \xrightarrow{C} \overrightarrow{C} \overrightarrow{N} = \frac{1}{4}\overrightarrow{C}\overrightarrow{A}$ $|CA| = 4|CN| \xrightarrow{C} \overrightarrow{N} = \frac{1}{4}\overrightarrow{C}\overrightarrow{A}$ $|CA| = \frac{1}{4}\overrightarrow{C}\overrightarrow{A} = \frac{1}{4}\overrightarrow{C}\overrightarrow{A}$ $|CA| = \frac{1}{4}\overrightarrow{C}\overrightarrow{A} = \frac{1}{$

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Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC|$ $|CA| = 4|CN|$ www $\overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$ $\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ $\overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$ $\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN}\right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}\right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $\overrightarrow{BS} = \overrightarrow{BA} + \overrightarrow{AS} = \left(\overrightarrow{BC} + \overrightarrow{CA}\right) + \lambda \overrightarrow{AM} =$ $= -\overrightarrow{CB} + \overrightarrow{CA} + \lambda \left(\overrightarrow{AC} + \overrightarrow{CM}\right) = -\overrightarrow{CB} + \overrightarrow{CA} - \lambda \overrightarrow{CA} + \lambda \overrightarrow{CM} =$ $= (1 - \lambda)\overrightarrow{CA} - \overrightarrow{CB} + \lambda$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC| \xrightarrow{\text{ANS}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$
 $|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$
 $\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ $\overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$
Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN}\right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}\right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$$

$$\overrightarrow{BS} = \overrightarrow{BA} + \overrightarrow{AS} = \left(\overrightarrow{BC} + \overrightarrow{CA}\right) + \lambda \overrightarrow{AM} =$$

$$= -\overrightarrow{CB} + \overrightarrow{CA} + \lambda \left(\overrightarrow{AC} + \overrightarrow{CM}\right) = -\overrightarrow{CB} + \overrightarrow{CA} - \lambda \overrightarrow{CA} + \lambda \overrightarrow{CM} =$$

 $= (1 - \lambda)\overrightarrow{CA} - \overrightarrow{CB} + \lambda$

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Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC| \xrightarrow{\text{ww}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$
 $|BS|: |NS| = ?$ $|CA| = 4|CN| \xrightarrow{\text{ww}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$
 $|CA| = 4|CN| \xrightarrow{\text{ww}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$
Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$
 $|BS| = \mu \overrightarrow{BN} = \mu (\overrightarrow{BC} + \overrightarrow{CN}) = \mu (-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$
 $|BS| = |BA| + |AS| = (|BC| + |CA|) + \lambda |AM| = |AM|$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN} \right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA} \right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$$

$$\overrightarrow{BS} = \overrightarrow{BA} + \overrightarrow{AS} = \left(\overrightarrow{BC} + \overrightarrow{CA} \right) + \lambda \overrightarrow{AM} =$$

$$= -\overrightarrow{CB} + \overrightarrow{CA} + \lambda \left(\overrightarrow{AC} + \overrightarrow{CM} \right) = -\overrightarrow{CB} + \overrightarrow{CA} - \lambda \overrightarrow{CA} + \lambda \overrightarrow{CM} =$$

$$= (1 - \lambda)\overrightarrow{CA} - \overrightarrow{CB} + \lambda \cdot \frac{1}{3}\overrightarrow{CB}$$
_{3/}

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC| \xrightarrow{\text{NW}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$
 $|BS|: |NS| = ?$ $|CA| = 4|CN| \xrightarrow{\text{NW}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$
 $|CA| = 4|CN| \xrightarrow{\text{NW}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$
 $|CA| = 4|CN| \xrightarrow{\text{NW}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$
Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$

$$|\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu (\overrightarrow{BC} + \overrightarrow{CN}) = \mu (-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$$

$$|\overrightarrow{BS} = \overrightarrow{BA} + \overrightarrow{AS} = (\overrightarrow{BC} + \overrightarrow{CA}) + \lambda \overrightarrow{AM} =$$

$$= -\overrightarrow{CB} + \overrightarrow{CA} + \lambda \left(\overrightarrow{AC} + \overrightarrow{CM} \right) = -\overrightarrow{CB} + \overrightarrow{CA} - \lambda \overrightarrow{CA} + \lambda \overrightarrow{CM} =$$

$$= (1 - \lambda)\overrightarrow{CA} - \overrightarrow{CB} + \lambda \cdot \frac{1}{3}\overrightarrow{CB} = (1 - \lambda)\overrightarrow{CA}$$
3/

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC| \longrightarrow \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$
 $|BS|: |NS| = ?$ $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$
 $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$
 $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$
Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$

$$\overrightarrow{BS} = \overrightarrow{BA} + \overrightarrow{AS} = \left(\overrightarrow{BC} + \overrightarrow{CA}\right) + \lambda \overrightarrow{AM} =$$

$$= -\overrightarrow{CB} + \overrightarrow{CA} + \lambda \left(\overrightarrow{AC} + \overrightarrow{CM}\right) = -\overrightarrow{CB} + \overrightarrow{CA} - \lambda \overrightarrow{CA} + \lambda \overrightarrow{CM} =$$

 $= (1 - \lambda)\overrightarrow{CA} - \overrightarrow{CB} + \lambda \cdot \frac{1}{3}\overrightarrow{CB} = (1 - \lambda)\overrightarrow{CA} + \left(\frac{\lambda}{3} - 1\right)\overrightarrow{CB}$

 $\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN} \right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA} \right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$

Rješenje
$$|AS|: |MS| = ?$$
 $|BM| = \frac{2}{3}|BC| \xrightarrow{\text{ANN}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$
 $|BS|: |NS| = ?$ $|CA| = 4|CN| \xrightarrow{\text{ANN}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$
 $\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ $\overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$
Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$
 $\overrightarrow{BS} = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$ $\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN}\right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}\right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$

$$= -\overrightarrow{CB} + \overrightarrow{CA} + \lambda \left(\overrightarrow{AC} + \overrightarrow{CM}\right) = -\overrightarrow{CB} + \overrightarrow{CA} - \lambda \overrightarrow{CA} + \lambda \overrightarrow{CM} =$$

$$= (1 - \lambda)\overrightarrow{CA} - \overrightarrow{CB} + \lambda \cdot \frac{1}{3}\overrightarrow{CB} = (1 - \lambda)\overrightarrow{CA} + \left(\frac{\lambda}{3} - 1\right)\overrightarrow{CB}$$
3

 $\overrightarrow{BS} = \overrightarrow{BA} + \overrightarrow{AS} = \left(\overrightarrow{BC} + \overrightarrow{CA}\right) + \lambda \overrightarrow{AM} =$

$$|SS| : |NS| = ?$$

$$|CA| = 4|CN| \xrightarrow{\text{www}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R} \qquad \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

$$Odabrana \ baza: \ \mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN}\right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}\right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$$

$$\overrightarrow{BS} = \mu \overrightarrow{BN} = \mu \left(\overrightarrow{BC} + \overrightarrow{CN}\right) = \mu \left(-\overrightarrow{CB} + \frac{1}{4}\overrightarrow{CA}\right) = \frac{\mu}{4}\overrightarrow{CA} - \mu \overrightarrow{CB}$$

 $|BM| = \frac{2}{3}|BC| \longrightarrow \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$

|AS| : |MS| = ?

 $\overrightarrow{BS} = \overrightarrow{BA} + \overrightarrow{AS} = \left(\overrightarrow{BC} + \overrightarrow{CA}\right) + \lambda \overrightarrow{AM} =$

Rješenje

$$= -\overrightarrow{CB} + \overrightarrow{CA} + \lambda \left(\overrightarrow{AC} + \overrightarrow{CM} \right) = -\overrightarrow{CB} + \overrightarrow{CA} - \lambda \overrightarrow{CA} + \lambda \overrightarrow{CM} =$$

$$= (1 - \lambda)\overrightarrow{CA} - \overrightarrow{CB} + \lambda \cdot \frac{1}{3}\overrightarrow{CB} = (1 - \lambda)\overrightarrow{CA} + \left(\frac{\lambda}{3} - 1\right)\overrightarrow{CB}$$
3

$$|AS|:|MS|=?$$

$$|BS|:|NS|=?$$

$$M$$

$$\overrightarrow{BS} = \mu$$

$$S$$

$$\overrightarrow{BS} = \mu \overrightarrow{CA} - \mu \overrightarrow{CB}$$

$$B$$

$$|BM| = \frac{2}{3}|BC| \xrightarrow{\text{ww}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$
$$|CA| = 4|CN| \xrightarrow{\text{ww}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA| = 4|CN| \xrightarrow{\text{-www}} CN = \frac{1}{4}CA$$

$$\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R} \qquad \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$

$$\overrightarrow{BS} = (1 - \lambda)\overrightarrow{CA} + \left(\frac{\lambda}{3} - 1\right)\overrightarrow{CB}$$

$$|AS|:|MS| = ?$$

$$|BS|:|NS| = ?$$

$$M$$

$$\overrightarrow{BS} = \mu$$

$$S$$

$$B\overrightarrow{S} = \mu$$

$$|AS| = ?$$
 $|BM| = \frac{2}{3}|BC| \xrightarrow{\text{over}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$
 $|SS| = ?$ $|CA| = 4|CN| \xrightarrow{\text{over}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$
 $|\overrightarrow{BS}| = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ $|\overrightarrow{AS}| = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$

Odabrana baza: $\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$

$$\overrightarrow{BS} = (1 - \lambda)\overrightarrow{CA} + \left(\frac{\lambda}{3} - 1\right)\overrightarrow{CB}$$

$$|AS|:|MS|=? \qquad |BM|=\frac{2}{3}|BC| \xrightarrow{\text{const}} \overrightarrow{CM}=\frac{1}{3}\overrightarrow{CB}$$

$$|CA|=4|CN| \xrightarrow{\text{const}} \overrightarrow{CN}=\frac{1}{4}\overrightarrow{CA}$$

$$|CA|=4|CN| \xrightarrow{\text{const}} \overrightarrow{CN}=\frac{1}{4}\overrightarrow{CN}=\frac{1}{4}\overrightarrow{CN}=\frac{1}{4}\overrightarrow{CN}=\frac{1}{4}\overrightarrow{CN}=\frac{1}{4}\overrightarrow{CN}=\frac{1}{4}\overrightarrow{CN}=\frac{1}{4}\overrightarrow{CN}=\frac{1}{4}\overrightarrow{CN}$$

 $\frac{\mu}{4} = 1 - \lambda$

$$|AS|: |MS| = ? \qquad |BM| = \frac{2}{3}|BC| \xrightarrow{\text{const}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$

$$|CA| = 4|CN| \xrightarrow{\text{const}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA|$$

$$|BM| = \frac{2}{3}|BC| \xrightarrow{\sim} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$
$$|CA| = 4|CN| \xrightarrow{\sim} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

Odabrana baza:
$$\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$$

$$\overrightarrow{BS} = (1 - \lambda)\overrightarrow{CA} + \left(\frac{\lambda}{3} - 1\right)\overrightarrow{CB}$$

$$\frac{\mu}{4} = 1 - \lambda$$

$$-\mu$$
 =

$$|AS| : |MS| = ?$$

$$|BS| : |NS| = ?$$

$$M$$

$$\overrightarrow{BS} = \mu$$

$$A$$

$$\overrightarrow{BS} = \frac{\mu}{4}\overrightarrow{CA} - \mu\overrightarrow{CB}$$

$$B$$

$$|BM| = \frac{2}{3}|BC| \xrightarrow{\sim} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$
$$|CA| = 4|CN| \xrightarrow{\sim} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R} \qquad \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

Odabrana baza:
$$\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$$

$$\overrightarrow{BS} = (1 - \lambda)\overrightarrow{CA} + \left(\frac{\lambda}{3} - 1\right)\overrightarrow{CB}$$

$$\frac{\mu}{4} = 1 - \lambda$$
$$-\mu = \frac{\lambda}{3} - 1$$

$$|AS| : |MS| = ?$$

$$|BS| : |NS| = ?$$

$$M$$

$$\overrightarrow{BS} = \mu$$

$$S$$

$$B\overrightarrow{S} = \mu$$

$$|BM| = \frac{2}{3}|BC| \xrightarrow{\bullet} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$
$$|CA| = 4|CN| \xrightarrow{\bullet} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$$
 $\overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$

$$AS = \lambda AM, \ \lambda \in \mathbb{R}$$

Odabrana baza:
$$\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$$

$$\overrightarrow{BS} = (1 - \lambda)\overrightarrow{CA} + \left(\frac{\lambda}{3} - 1\right)\overrightarrow{CB}$$

$$\frac{\mu}{4} = 1 - \lambda$$

$$-\mu = \frac{\lambda}{3} - 1$$

$$|BM| = \frac{2}{3}|BC| \xrightarrow{\sim} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$
$$|CA| = 4|CN| \xrightarrow{\sim} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

Odabrana baza:
$$\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$$

$$\overrightarrow{BS} = (1 - \lambda)\overrightarrow{CA} + \left(\frac{\lambda}{3} - 1\right)\overrightarrow{CB}$$

$$\frac{\mu}{4} = 1 - \lambda$$

$$-\mu = \frac{\lambda}{3} - 1$$

$$|AS|:|MS|=?$$

$$|BS|:|NS|=?$$

$$M$$

$$\overrightarrow{BS} = \mu$$

$$S$$

$$\frac{\mu}{4} = 1 - \lambda$$

$$-\mu = \frac{\lambda}{3} - 1$$

$$|AS|:|MS|=?$$

$$BS = 2$$

$$BS = 4$$

$$A = 1 - \lambda$$

$$A = 4$$

$$A = 4$$

$$A = 1 - \lambda$$

$$A = 4$$

$$A = 4$$

$$A = 1 - \lambda$$

$$A = 4$$

$$|BM| = \frac{2}{3}|BC| \longrightarrow \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$

 $|SS| = ?$
 $|CA| = 4|CN| \longrightarrow \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$
 $\overrightarrow{BS} = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R}$ $\overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$

Odabrana baza:
$$\mathcal{B} = (\overrightarrow{CA}, \overrightarrow{CB})$$

$$\overrightarrow{BS} = (1 - \lambda)\overrightarrow{CA} + \left(\frac{\lambda}{3} - 1\right)\overrightarrow{CB}$$

$$|AS|:|MS|=? \qquad |BM|=\frac{2}{3}|BC| \xrightarrow{\text{ww}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$

$$|CA|=4|CN| \xrightarrow{\text{ww}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA$$

 $\frac{\mu}{4} = 1 - \lambda \left\{ / \cdot 4 \right\}$ $-\mu = \frac{\lambda}{3} - 1 \left\{ / \cdot 3 \right\}$ $4\lambda + \mu = 4$

$$|AS|:|MS|=? \qquad |BM|=\frac{2}{3}|BC| \xrightarrow{\text{ww}} \overrightarrow{CM}=\frac{1}{3}\overrightarrow{CB}$$

$$|BS|:|NS|=? \qquad |CA|=4|CN| \xrightarrow{\text{ww}} \overrightarrow{CN}=\frac{1}{4}\overrightarrow{CA}$$

$$|BS|=\mu\overrightarrow{BN}, \ \mu\in\mathbb{R} \qquad \overrightarrow{AS}=\lambda\overrightarrow{AM}, \ \lambda\in\mathbb{R}$$

$$|CA|=4|CN| \xrightarrow{\text{ww}} \overrightarrow{CN}=\frac{1}{4}\overrightarrow{CA}$$

$$|CA|=4|CN| \xrightarrow{\text{ww}} \overrightarrow{CN}=\frac{1}{4}\overrightarrow$$

$$\frac{\mu}{4} = 1 - \lambda$$

$$-\mu = \frac{\lambda}{3} - 1$$

$$/\cdot 3$$

$$4\lambda + \mu = 4$$

$$\lambda + 3\mu = 3$$

$$|AS|:|MS|=? \qquad |BM|=\frac{2}{3}|BC| \xrightarrow{\text{ww}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$

$$|CA|=4|CN| \xrightarrow{\text{ww}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA$$

$$\frac{\mu}{4} = 1 - \lambda$$

$$-\mu = \frac{\lambda}{3} - 1$$

$$/\cdot 3$$

$$4\lambda + \mu = 4$$

$$\lambda + 3\mu = 3$$

$$|AS|:|MS|=? \qquad |BM|=\frac{2}{3}|BC| \xrightarrow{\text{NW}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$

$$|BS|:|NS|=? \qquad |CA|=4|CN| \xrightarrow{\text{NW}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|BS|=\mu \overrightarrow{BN}, \ \mu \in \mathbb{R} \qquad \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

$$|CA|=4|CN| \xrightarrow{\text{NW}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA|=4|CN| \xrightarrow{\text{NW}$$

$$|AS|:|MS|=? \qquad |BM|=\frac{2}{3}|BC| \xrightarrow{\text{ww}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$

$$|BS|:|NS|=? \qquad |CA|=4|CN| \xrightarrow{\text{ww}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA|=4|CN| \xrightarrow{\text{ww}} \overrightarrow{CN} = \frac{1}$$

$$|AS|:|MS|=? \qquad |BM|=\frac{2}{3}|BC| \xrightarrow{\text{Now}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$

$$|BS|:|NS|=? \qquad |CA|=4|CN| \xrightarrow{\text{Now}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|BS|=\mu \overrightarrow{BN}, \ \mu \in \mathbb{R} \qquad \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

$$|CA|=4|CN| \xrightarrow{\text{Now}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA|=4|CN| \xrightarrow{\text{No$$

$$|AS|:|MS|=? \qquad |BM|=\frac{2}{3}|BC| \xrightarrow{\text{NNS}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$

$$|CA|=4|CN| \xrightarrow{\text{NNS}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA|=4|CN| \xrightarrow{\text{NNS}} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA|=4$$

$$|AS|:|MS|=? \qquad |BM|=\frac{2}{3}|BC| \xrightarrow{\text{NNS}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$

$$|CA|=4|CN| \xrightarrow{\text{NNS}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA|=4|CN| \xrightarrow{\text{NNS}} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA|=4|CN| \xrightarrow{\text{NNS}} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA|=4|CN| \xrightarrow$$

$$|AS|: |MS| = ? \qquad |BM| = \frac{2}{3}|BC| \xrightarrow{\text{own}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$

$$|CA| = 4|CN| \xrightarrow{\text{own}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|AS|: |MS| = ?$$

$$|BM| = \frac{2}{3}|BC| \xrightarrow{\text{ANS}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \lambda \in \mathbb{R}$$

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$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \lambda \in \mathbb{R}$$

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$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \lambda \in \mathbb{R}$$

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$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} =$$

$$|AS|: |MS| = ? \qquad |BM| = \frac{2}{3}|BC| \xrightarrow{\text{ANS}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$

$$|BS|: |NS| = ? \qquad |CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|BS| = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R} \qquad \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

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$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

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$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

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$$|CA| = 4|CA| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda$$

$$|AS|: |MS| = ? \qquad |BM| = \frac{2}{3}|BC| \xrightarrow{\text{ANS}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$

$$|BS|: |NS| = ? \qquad |CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|BS| = \mu \overrightarrow{BN}, \ \mu \in \mathbb{R} \qquad \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|CA| = 4|CN| \xrightarrow{\text{ANS}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

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$$|AS|:|MS|=? \qquad |BM|=\frac{2}{3}|BC| \xrightarrow{\text{ANN}} \overrightarrow{CM} = \frac{1}{3}\overrightarrow{CB}$$

$$|BS|:|NS|=? \qquad |CA|=4|CN| \xrightarrow{\text{ANN}} \overrightarrow{CN} = \frac{1}{4}\overrightarrow{CA}$$

$$|BS|=\mu \overrightarrow{BN}, \ \mu \in \mathbb{R} \qquad \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

$$|CA|=4|CN| \xrightarrow{\text{ANN}} \overrightarrow{AS} = \lambda \overrightarrow{AM}, \ \lambda \in \mathbb{R}$$

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$$|CA|=4|CN| \xrightarrow{\text{ANN}} \overrightarrow{AS} =$$

$$\frac{\mu}{4} = 1 - \lambda \begin{cases} / \cdot 4 \\ -\mu = \frac{\lambda}{3} - 1 \end{cases} / \cdot 3 \qquad 4\lambda + \mu = 4 \end{cases} \qquad \lambda = \frac{9}{11}$$

$$\mu = \frac{8}{11}$$

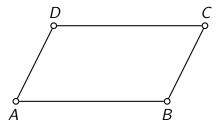
$$\overrightarrow{AS} = \frac{9}{11} \overrightarrow{AM} \xrightarrow{\text{www}} |AS| : |MS| = 9 : 2 \xrightarrow{\text{www}} \overrightarrow{AS} = -\frac{9}{2} \overrightarrow{MS}$$

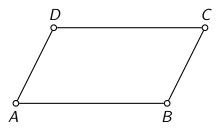
$$\overrightarrow{BS} = \frac{8}{11} \overrightarrow{BN} \xrightarrow{\text{www}} |BS| : |NS| = 8 : 3 \xrightarrow{\text{www}} \overrightarrow{BS} = -\frac{8}{3} \overrightarrow{NS}$$

treći zadatak

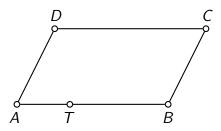
Zadatak 3

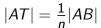
Zadan je paralelogram ABCD i točka T na stranici \overline{AB} takva da je $|AT| = \frac{1}{n}|AB|$ za neki realni broj n > 1. Neka je S presjek dužina \overline{AC} i \overline{TD} . Odredite omjer u kojemu točka S dijeli dužinu \overline{AC} .

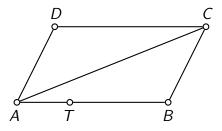




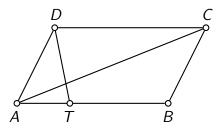




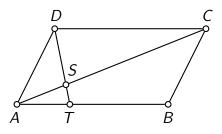






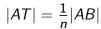




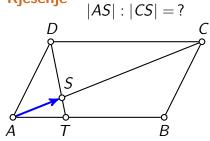




Rješenje
$$|AS|:|CS|=?$$

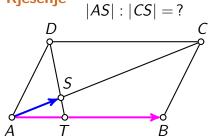


Rješenje
$$|AS|:|CS|=?$$



$$|AT| = \frac{1}{n}|AB|$$

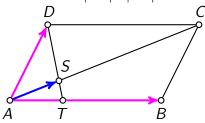
Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$



$$|AT| = \frac{1}{n}|AB|$$

Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

Rješenje
$$|AS|:|CS|=?$$



$$|AT| = \frac{1}{n}|AB|$$

Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

Rješenje
$$|AS|: |CS| = ?$$
 $|AT| = \frac{1}{n} |AB|$

Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

A $\overrightarrow{AS} = \lambda \overrightarrow{AC}$

Rješenje
$$|AS|:|CS|=$$
? $|AT|=\frac{1}{n}|AB|$
Odabrana baza: $\mathcal{B}=(\overrightarrow{AB},\overrightarrow{AD})$
 $\overrightarrow{AS}=\lambda\overrightarrow{AC},\ \lambda\in\mathbb{R}$

Rješenje
$$|AS|:|CS|=$$
? $|AT|=\frac{1}{n}|AB|$
Odabrana baza: $\mathcal{B}=(\overrightarrow{AB},\overrightarrow{AD})$
 $\overrightarrow{AS}=\lambda\overrightarrow{AC},\ \lambda\in\mathbb{R}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC}$$

Rješenje
$$|AS|:|CS|=$$
? $|AT|=\frac{1}{n}|AB|$
Odabrana baza: $\mathcal{B}=(\overrightarrow{AB},\overrightarrow{AD})$
 $\overrightarrow{AS}=\lambda\overrightarrow{AC},\ \lambda\in\mathbb{R}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left($$

Rješenje
$$|AS|:|CS|=$$
? $|AT|=\frac{1}{n}|AB|$
Odabrana baza: $\mathcal{B}=(\overrightarrow{AB},\overrightarrow{AD})$
 $\overrightarrow{AS}=\lambda\overrightarrow{AC},\ \lambda\in\mathbb{R}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} \right)$$

Rješenje
$$|AS|:|CS|=$$
? $|AT|=\frac{1}{n}|AB|$
Odabrana baza: $\mathcal{B}=(\overrightarrow{AB},\overrightarrow{AD})$
 $\overrightarrow{AS}=\lambda\overrightarrow{AC},\ \lambda\in\mathbb{R}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \right)$$

Rješenje
$$|AS|:|CS|=$$
? $|AT|=\frac{1}{n}|AB|$
Odabrana baza: $\mathcal{B}=(\overrightarrow{AB},\overrightarrow{AD})$
 $\overrightarrow{AS}=\lambda\overrightarrow{AC},\ \lambda\in\mathbb{R}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \overrightarrow{AD} \right)$$

Rješenje
$$|AS|:|CS|=$$
? $|AT|=\frac{1}{n}|AB|$
Odabrana baza: $\mathcal{B}=(\overrightarrow{AB},\overrightarrow{AD})$
 $\overrightarrow{AS}=\lambda\overrightarrow{AC},\ \lambda\in\mathbb{R}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \overrightarrow{AD} \right) = \lambda \overrightarrow{AB}$$

Rješenje
$$|AS|:|CS|=$$
? $|AT|=\frac{1}{n}|AB|$
Odabrana baza: $\mathcal{B}=(\overrightarrow{AB},\overrightarrow{AD})$
 $\overrightarrow{AS}=\lambda\overrightarrow{AC},\ \lambda\in\mathbb{R}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \overrightarrow{AD} \right) = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

Rješenje
$$|AS|: |CS| = ?$$
 $|AT| = \frac{1}{n}|AB|$
Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$
 $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R}$
 $\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \overrightarrow{AD} \right) = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

Rješenje
$$|AS|: |CS| = ?$$
 $|AT| = \frac{1}{n}|AB|$
Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$
 $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R}$
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Rješenje
$$|AS|: |CS| = ?$$
 $|AT| = \frac{1}{n}|AB|$
Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R}$$

$$\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \overrightarrow{AD} \right) = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} =$$

Rješenje
$$|AS|: |CS| = ?$$
 $|AT| = \frac{1}{n}|AB|$
Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R}$$

$$\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \overrightarrow{AD} \right) = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} = \overrightarrow{AT}$$

Rješenje
$$|AS|: |CS| = ?$$
 $|AT| = \frac{1}{n} |AB|$ Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R}$$

$$\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

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$$\overrightarrow{AS} = \overrightarrow{AT} +$$

Rješenje
$$|AS|:|CS|=$$
? $|AT|=\frac{1}{n}|AB|$
Odabrana baza: $\mathcal{B}=(\overrightarrow{AB},\overrightarrow{AD})$
 $\overrightarrow{AS}=\lambda\overrightarrow{AC},\ \lambda\in\mathbb{R}$
 $\overrightarrow{AS}=\lambda\overrightarrow{AB}+\lambda\overrightarrow{AD}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \overrightarrow{AD} \right) = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} = \overrightarrow{AT} + \overrightarrow{TS}$$

Rješenje
$$|AS|: |CS| = ?$$
 $|AT| = \frac{1}{n}|AB|$ www $\overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$

Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$
 $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R}$

 $\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$

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$$\overrightarrow{AS} = \overrightarrow{AT} + \overrightarrow{TS} =$$

Rješenje
$$|AS|:|CS|=$$
? $|AT|=\frac{1}{n}|AB|$ www $\overrightarrow{AT}=\frac{1}{n}\overrightarrow{AB}$ Odabrana baza: $\mathcal{B}=(\overrightarrow{AB},\overrightarrow{AD})$ $\overrightarrow{AS}=\lambda\overrightarrow{AC},\ \lambda\in\mathbb{R}$ $\overrightarrow{AS}=\lambda\overrightarrow{AB}+\lambda\overrightarrow{AD}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \overrightarrow{AD} \right) = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} = \overrightarrow{AT} + \overrightarrow{TS} = \frac{1}{n} \overrightarrow{AB}$$

Rješenje
$$|AS|: |CS| = ?$$
 $|AT| = \frac{1}{n}|AB|$ $\overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$

Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$
 $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}$
 $\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \overrightarrow{AD} \right) = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} = \overrightarrow{AT} + \overrightarrow{TS} = \frac{1}{2} \overrightarrow{AB} + AB$$

Rješenje
$$|AS|: |CS| = ?$$
 $|AT| = \frac{1}{n}|AB| \xrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$

Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$
 $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$

 $\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \overrightarrow{AD} \right) = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} = \overrightarrow{AT} + \overrightarrow{TS} = \frac{1}{n} \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

Rješenje
$$|AS|: |CS| = ?$$
 $|AT| = \frac{1}{n}|AB| \xrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$

Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$
 $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R}$ $\overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$

 $\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \overrightarrow{AD} \right) = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} = \overrightarrow{AT} + \overrightarrow{TS} = \frac{1}{n} \overrightarrow{AB} + \mu \overrightarrow{TD}$$

Rješenje
$$|AS|: |CS| = ?$$
 $|AT| = \frac{1}{n}|AB|$ www $\overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$ $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$ $\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \overrightarrow{AD} \right) = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} = \overrightarrow{AT} + \overrightarrow{TS} = \frac{1}{n} \overrightarrow{AB} + \mu \overrightarrow{TD} = \frac{1}{n} \overrightarrow{AB}$$

Rješenje
$$|AS|: |CS| = ?$$
 $|AT| = \frac{1}{n}|AB|$ www $\overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$ $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$ $\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \overrightarrow{AD} \right) = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} = \overrightarrow{AT} + \overrightarrow{TS} = \frac{1}{n} \overrightarrow{AB} + \mu \overrightarrow{TD} = \frac{1}{n} \overrightarrow{AB} + \mu \left(\overrightarrow{AB} + \overrightarrow{AB} +$$

Rješenje
$$|AS|: |CS| = ?$$
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Rješenje
$$|AS|:|CS|=$$
? $|AT|=\frac{1}{n}|AB|$ www $\overrightarrow{AT}=\frac{1}{n}\overrightarrow{AB}$ Odabrana baza: $\mathcal{B}=(\overrightarrow{AB},\overrightarrow{AD})$ $\overrightarrow{AS}=\lambda\overrightarrow{AC},\ \lambda\in\mathbb{R}$ $\overrightarrow{TS}=\mu\overrightarrow{TD},\ \mu\in\mathbb{R}$ $\overrightarrow{AS}=\lambda\overrightarrow{AB}+\lambda\overrightarrow{AD}$

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$$= \frac{1}{n} \overrightarrow{AB}$$

Rješenje
$$|AS|: |CS| = ?$$
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$$= \frac{1}{n} \overrightarrow{AB} + \mu \overrightarrow{TA}$$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC} = \lambda \left(\overrightarrow{AB} + \overrightarrow{AD} \right) = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} = \overrightarrow{AT} + \overrightarrow{TS} = \frac{1}{n} \overrightarrow{AB} + \mu \overrightarrow{TD} = \frac{1}{n} \overrightarrow{AB} + \mu \left(\overrightarrow{TA} + \overrightarrow{AD} \right) =$$

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$$= \frac{1}{n} \overrightarrow{AB} + \mu \overrightarrow{TA} + \mu \overrightarrow{AD} = \frac{1}{n} \overrightarrow{AB}$$

Rješenje
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 $|AT| = \frac{1}{n}|AB| \xrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$ $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$ $\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$

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$$= \frac{1}{n} \overrightarrow{AB} + \mu \overrightarrow{TA} + \mu \overrightarrow{AD} = \frac{1}{n} \overrightarrow{AB} + \mu \cdot$$

Rješenje
$$|AS|: |CS| = ?$$
 $|AT| = \frac{1}{n}|AB|$ $\longrightarrow \overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$ $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$ $\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$

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Rješenje
$$|AS|: |CS| = ?$$
 $|AT| = \frac{1}{n}|AB|$ $\longrightarrow \overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$ Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$ $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$ $\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$

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$$= \frac{1}{n} \overrightarrow{AB} + \mu \overrightarrow{TA} + \mu \overrightarrow{AD} = \frac{1}{n} \overrightarrow{AB} + \mu \cdot \frac{-1}{n} \overrightarrow{AB} + \mu \overrightarrow{AD}$$

|AS| : |CS| = ?

Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$$

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$$= \frac{1}{n}\overrightarrow{AB} + \mu\overrightarrow{TA} + \mu\overrightarrow{AD} = \frac{1}{n}\overrightarrow{AB} + \mu \cdot \frac{-1}{n}\overrightarrow{AB} + \mu\overrightarrow{AD} =$$

$$=\frac{1-\mu}{n}\overrightarrow{AB}$$

Rješenje
$$|AS|:|CS|=?$$

 $\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$

 $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$

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$$= \frac{1-\mu}{n}\overrightarrow{AB} + \mu\overrightarrow{AD}$$

Rješenje
$$|AS|:|CS|=?$$

Odabrana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

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Rješenje
$$|AS|:|CS|=?$$

 $=\frac{1-\mu}{n}\overrightarrow{AB}+\mu\overrightarrow{AD}$

Odabrana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

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$$|AS|: |CS| = ? \qquad |AT| = \frac{1}{n}|AB| \xrightarrow{\text{www}} AT = \frac{1}{n}AB$$
Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$$

$$\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$|AT| = \frac{1}{n}|AB| \xrightarrow{} \overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$$

Odabrana baza:
$$\mathcal{B} = (AB, AD)$$

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$$\overrightarrow{AS} = \frac{1-\mu}{n}\overrightarrow{AB} + \mu\overrightarrow{AD}$$

$$|AS|: |CS| = ? \qquad |AT| = \frac{1}{n}|AB| \xrightarrow{\text{www}} AT = \frac{1}{n}AB$$
Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$$

$$\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$|AT| = \frac{1}{n}|AB| \xrightarrow{\text{www}} \overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$$

Odabrana baza:
$$\mathcal{B} = (AB, AD)$$

$$\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} = \frac{1-\mu}{n}\overrightarrow{AB} + \mu\overrightarrow{AD}$$

$$|AS|:|CS|=?$$

Odabrana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

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 \overline{A}

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$$\lambda = \frac{1-\mu}{n}$$

$$|AS|:|CS|=?$$

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$$|AS|:|CS|=?$$

$$|AT| = \frac{1}{n}|AB| \xrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$$

$$\frac{D}{AS}$$

Odabrana baza:
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$$\mathcal{B}=(AB,AD)$$
 $\overrightarrow{AS}=\lambda\overrightarrow{AC},\;\lambda\in\mathbb{R}\;\;\overrightarrow{TS}=\mu\overrightarrow{TD},\;\mu\in\mathbb{R}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$AS = \lambda AB + \lambda AD$$

$$\lambda = \frac{1-\mu}{n}$$

 $\lambda = \mu$

$$\overrightarrow{AS} = \frac{1-\mu}{n}\overrightarrow{AB} + \mu\overrightarrow{AD}$$

$$|AS|:|CS|=?$$

$$|AT| = \frac{1}{n}|AB| \xrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$$

Odabrana baza:
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$$\overrightarrow{AS} = \frac{1-\mu}{n}\overrightarrow{AB} + \mu\overrightarrow{AD}$$

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$$|AS|:|CS|=?$$

$$|AT| = \frac{1}{n}|AB| \xrightarrow{\text{www}} \overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$$

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$$\overrightarrow{AS} = \frac{1-\mu}{n}\overrightarrow{AB} + \mu\overrightarrow{AD}$$

$$\lambda = \frac{1-\mu}{n}$$

$$\lambda = \mu$$

 $\lambda =$

$$|AS|:|CS|=?$$

$$|AT| = \frac{1}{n}|AB| \xrightarrow{\text{www}} \overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$$

$$\overline{A}$$

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$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$$

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$$\lambda = \frac{1-\mu}{n}$$

$$\overrightarrow{AS} = \frac{1-\mu}{n}\overrightarrow{AB} + \mu\overrightarrow{AD}$$

$$\lambda = \frac{1-\lambda}{n}$$

 $\lambda = \mu$

$$|AS|:|CS|=?$$

$$=$$
? $|AT| = \frac{1}{2}$

$$|AT| = \frac{1}{n}|AB| \xrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$$

Odabrana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

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$$\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} = \frac{1-\mu}{n}\overrightarrow{AB} + \mu\overrightarrow{AD}$$

$$A \qquad T$$

$$\lambda = \frac{1-\mu}{n}$$

$$\lambda = \mu$$

$$\lambda = \frac{1-\lambda}{n} / \cdot n$$

$$|AS|:|CS|=?$$

$$|AT| = \frac{1}{n}|AB| \xrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$$

$$\frac{D}{AS}$$

Odabrana baza:
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$$\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

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$$\lambda = \frac{1-\mu}{n}$$

$$\lambda = \mu$$

$$\lambda = \frac{1-\lambda}{n} / \cdot n$$

$$\mathit{n}\lambda =$$

$$|AS|:|CS|=?$$

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$$\lambda = \frac{1-\mu}{n}$$

$$\overrightarrow{AS} = \frac{1-\mu}{n}\overrightarrow{AB} + \mu\overrightarrow{AD}$$

$$\lambda = \mu$$

$$\lambda = \frac{1-\lambda}{n} / \cdot n$$

$$n\lambda = 1 - \lambda$$

$$|AS|:|CS|=?$$

$$A T B$$

Odabrana baza:
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$$\lambda = \frac{1-\mu}{n}$$
$$\lambda = \mu$$

$$\lambda = \frac{1-\lambda}{n} / \cdot n$$

$$\lambda = \frac{1-\lambda}{n} / \cdot$$

$$n\lambda = 1 - \lambda$$

 $(n+1)\lambda =$

$$|AS|:|CS|=?$$

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$$\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\overrightarrow{AS} = \frac{1-\mu}{n}\overrightarrow{AB} + \mu\overrightarrow{AD}$$

$$\lambda = \mu$$

 $\lambda = \frac{1-\mu}{n}$

$$\lambda = \frac{1-\lambda}{n} / \cdot n$$

$$\lambda = \frac{1-\lambda}{n} / \cdot$$

$$n\lambda = 1 - \lambda$$

$$|AS|:|CS|=?$$

$$D$$

$$A$$

$$T$$

$$B$$

$$\lambda = \frac{1-\mu}{n}$$

Odabrana baza:
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$$\overrightarrow{AS} = \frac{1-\mu}{n}\overrightarrow{AB} + \mu\overrightarrow{AD}$$

$$\lambda = \frac{1-\lambda}{n} / \cdot n$$

$$n\lambda = 1 - \lambda$$

$$(n+1)\lambda = 1$$
 $\lambda =$

 $\lambda = \mu$

$$\lambda = \frac{1-\mu}{n}$$

$$\lambda = \frac{1}{n}$$

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$$\lambda = \frac{1-\lambda}{n} / \cdot n$$

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$$(n+1)\lambda = 1$$

$$\lambda = \frac{1}{n+1}$$

$$7/17$$

 $|AT| = \frac{1}{n}|AB| \xrightarrow{\text{num}} \overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$

Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

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 $|AT| = \frac{1}{n}|AB| \xrightarrow{\text{num}} \overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$

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$$\lambda = \frac{1-\mu}{n}$$

$$\lambda = \frac{1}{n}$$

$$\lambda = \frac{\mu}{\lambda}$$

$$\lambda = \frac{1-\lambda}{n} / \cdot n$$

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$$\lambda = \frac{1-\lambda}{n} / \cdot n$$

$$\lambda = \frac{1}{n+1} \wedge \lambda$$

$$\lambda = \frac{1}{n+1}$$

$$\lambda = \frac{1}{n+1}$$

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 $|AT| = \frac{1}{n}|AB| \longrightarrow \overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$

Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

 $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$

$$\begin{array}{cccc}
A & T & B \\
\lambda & = \frac{1-\mu}{n} & \overrightarrow{AS} & = \frac{1-\mu}{n}\overrightarrow{AB} + \mu\overrightarrow{AD} \\
\lambda & = \mu & \overrightarrow{AS} & = \frac{1}{n+1}\overrightarrow{AC} \xrightarrow{\sim} |AS| : |CS| & = \\
n\lambda & = 1 - \lambda & \\
(n+1)\lambda & = 1 & \\
\lambda & = \frac{1}{n+1} & \\
\lambda & = \frac{1}{n+1} & \\
\end{array}$$

 $|AT| = \frac{1}{n}|AB| \xrightarrow{\text{num}} \overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$

Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

 $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$

$$\overrightarrow{AS} = \lambda \overrightarrow{AB} + \lambda \overrightarrow{AD}$$

$$\lambda = \frac{1-\mu}{n}$$

$$\lambda = \mu$$

$$\lambda = \frac{1-\lambda}{n} / \cdot n$$

$$n\lambda = 1 - \lambda$$

$$(n+1)\lambda = 1$$

$$\lambda = \frac{1}{n+1}$$

$$\lambda = \frac{1}{n+1}$$

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$$\lambda = \frac{1}{n+1}$$

 $|AT| = \frac{1}{n}|AB| \xrightarrow{\text{num}} \overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$

Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

 $\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$

Odabrana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{AS} = \lambda \overrightarrow{AC}, \ \lambda \in \mathbb{R} \quad \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$$

$$\lambda = \frac{1-\mu}{n}$$

$$\lambda = \frac{1}{n}$$

$$\lambda = \frac{1}{n} / \cdot n$$

$$n\lambda = 1 - \lambda$$

$$(n+1)\lambda = 1$$

$$\lambda = \frac{1}{n+1}$$

$$\lambda = \frac{1}{n+1}$$
Odabrana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

$$\overrightarrow{AS} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{AS} = \mu \overrightarrow{TS} = \mu \overrightarrow{TD}, \ \mu \in \mathbb{R}$$

$$\overrightarrow{AS} = \frac{1-\mu}{n} \overrightarrow{AB} + \mu \overrightarrow{AD}$$

$$\overrightarrow{AS} = \frac{1}{n+1} \overrightarrow{AC} \xrightarrow{\text{www}} |AS| : |CS| = 1 : n$$

$$\overrightarrow{AS} = -\frac{1}{n} \overrightarrow{CS}$$

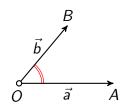
$$\lambda = \frac{1}{n+1}$$

 $|AT| = \frac{1}{n}|AB| \xrightarrow{\text{num}} \overrightarrow{AT} = \frac{1}{n}\overrightarrow{AB}$

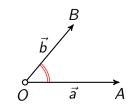
četvrti zadatak

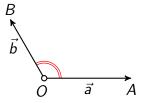
•
$$\vec{a}\vec{b} = |\vec{a}| \cdot |\vec{b}| \cdot \cos(\vec{a}, \vec{b}), \quad \vec{a}, \vec{b} \neq \vec{0}$$

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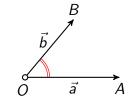


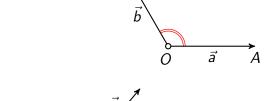
• $\vec{a} \cdot \vec{b} = |\vec{a}| \cdot |\vec{b}| \cdot \cos(\vec{a}, \vec{b}), \quad \vec{a}, \vec{b} \neq \vec{0}$



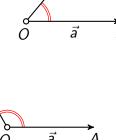


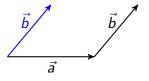
• $\vec{a} \cdot \vec{b} = |\vec{a}| \cdot |\vec{b}| \cdot \cos(\vec{a}, \vec{b}), \quad \vec{a}, \vec{b} \neq \vec{0}$



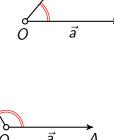


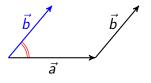
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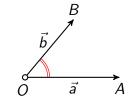


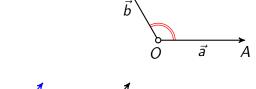
•
$$\vec{a} \cdot \vec{b} = |\vec{a}| \cdot |\vec{b}| \cdot \cos(\vec{a}, \vec{b}), \quad \vec{a}, \vec{b} \neq \vec{0}$$

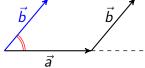




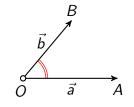
• $\vec{a} \cdot \vec{b} = |\vec{a}| \cdot |\vec{b}| \cdot \cos(\vec{a}, \vec{b}), \quad \vec{a}, \vec{b} \neq \vec{0}$

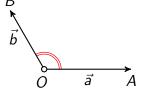


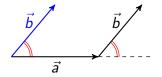




• $\vec{a} \cdot \vec{b} = |\vec{a}| \cdot |\vec{b}| \cdot \cos(\vec{a}, \vec{b}), \quad \vec{a}, \vec{b} \neq \vec{0}$

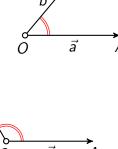


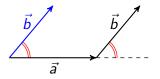




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$$\vec{a}\vec{b} = |\vec{a}| \cdot |\vec{b}| \cdot \cos(\vec{a}, \vec{b}), \quad \vec{a}, \vec{b} \neq \vec{0}$$

$$\bullet \cos(\vec{a}, \vec{b}) = \frac{\vec{a}\vec{b}}{|\vec{a}||\vec{b}|}$$

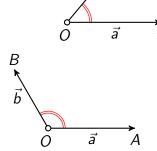


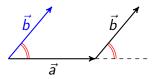


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$$\bullet \cos(\vec{a}, \vec{b}) = \frac{\vec{a}\vec{b}}{|\vec{a}||\vec{b}|}$$

• $\vec{a}^2 = |\vec{a}|^2$

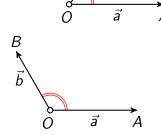


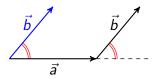


•
$$\vec{a} \cdot \vec{b} = |\vec{a}| \cdot |\vec{b}| \cdot \cos(\vec{a}, \vec{b}), \quad \vec{a}, \vec{b} \neq \vec{0}$$

$$\bullet \ \cos(\vec{a}, \vec{b}) = \frac{\vec{a}\,\vec{b}}{|\vec{a}|\,|\vec{b}|}$$

- $\vec{a}^2 = |\vec{a}|^2$
- $(\vec{a} \pm \vec{b})^2 = \vec{a}^2 \pm 2\vec{a}\vec{b} + \vec{b}^2$





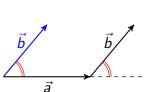
•
$$\vec{a} \cdot \vec{b} = |\vec{a}| \cdot |\vec{b}| \cdot \cos(\vec{a}, \vec{b}), \quad \vec{a}, \vec{b} \neq \vec{0}$$

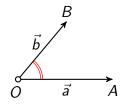
$$\bullet \ \cos(\vec{a}, \vec{b}) = \frac{\vec{a} \, \vec{b}}{|\vec{a}| \, |\vec{b}|}$$

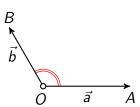
•
$$\vec{a}^2 = |\vec{a}|^2$$

•
$$(\vec{a} \pm \vec{b})^2 = \vec{a}^2 \pm 2\vec{a}\vec{b} + \vec{b}^2$$

•
$$\vec{a} \perp \vec{b} \Leftrightarrow \vec{a} \vec{b} = 0$$







$$|\vec{a}|^2 = \vec{a}^2$$

$$|\vec{a}|^2 = \vec{a}^2 / \sqrt{}$$

$$|\vec{a}|^2 = \vec{a}^2 / \sqrt{1}$$

$$\sqrt{|\vec{a}|^2} = \sqrt{\vec{a}^2}$$

$$|\vec{a}|^2 = \vec{a}^2 / \sqrt{1}$$

$$\sqrt{|\vec{a}|^2} = \sqrt{\vec{a}^2}$$

$$|\vec{a}|$$

$$|\vec{a}|^2 = \vec{a}^2 / \sqrt{1}$$

$$\sqrt{|\vec{a}|^2} = \sqrt{\vec{a}^2}$$

$$|\vec{a}| = 0$$

$$|\vec{a}|^2 = \vec{a}^2 / \sqrt{1}$$

$$\sqrt{|\vec{a}|^2} = \sqrt{\vec{a}^2}$$

$$|\vec{a}| = \vec{a}$$

$$|\vec{a}|^2 = \vec{a}^2 / \sqrt{1}$$

$$\sqrt{|\vec{a}|^2} = \sqrt{\vec{a}^2}$$

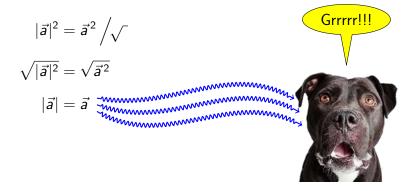
$$|\vec{a}| = \vec{a}$$

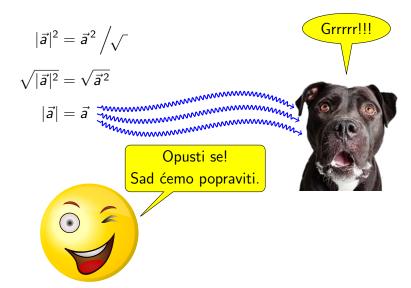


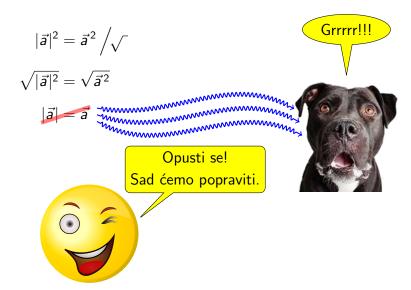
$$|\vec{a}|^2 = \vec{a}^2 / \sqrt{1}$$

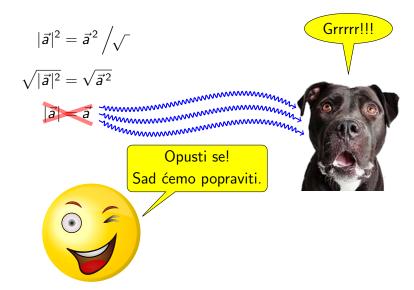
$$\sqrt{|\vec{a}|^2} = \sqrt{\vec{a}^2}$$

$$|\vec{a}| = \vec{a} - \frac{1}{1}$$

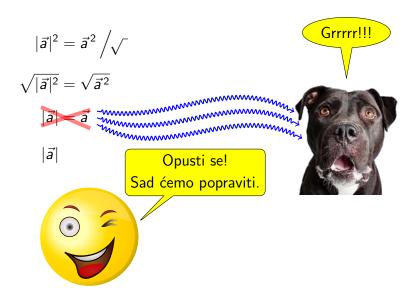




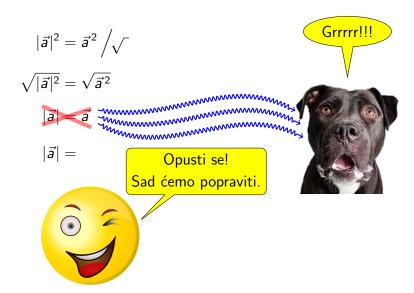




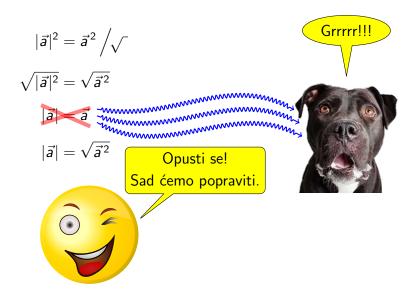
OPREZ



OPREZ



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Zadatak 4

Zadani su okomiti vektori $\vec{a} = \vec{m} + 2\vec{n}$ i $\vec{b} = 5\vec{m} - 4\vec{n}$ pri čemu su \vec{m} i \vec{n} jedinični vektori.

- a) Izračunajte kut između vektora \vec{m} i \vec{n} .
- b) Odredite duljinu vektora $\vec{a} + \vec{b}$.

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft (\vec{m}, \vec{n}) = ?$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft(\vec{m},\vec{n})=?$$

$$\cos(\vec{m},\vec{n}) =$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft(\vec{m},\vec{n})=?$$

$$\cos\left(\vec{m},\vec{n}\right) = ----$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft (\vec{m}, \vec{n}) = ?$$

$$\cos(\vec{m}, \vec{n}) = \frac{\vec{m} \cdot \vec{n}}{}$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft(\vec{m},\vec{n})=?$$

$$\cos\left(\vec{m},\vec{n}\right) = \frac{\vec{m}\cdot\vec{n}}{|\vec{m}|\cdot|\vec{n}|}$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft (\vec{m}, \vec{n}) = ?$$

$$\cos\left(\vec{m},\vec{n}
ight) = rac{ec{m}\cdotec{n}}{|ec{m}|\cdot|ec{n}|}$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft(\vec{m},\vec{n})=?$$

$$\cos\left(\vec{m},\vec{n}\,\right) = \frac{\vec{m}\cdot\vec{n}}{|\vec{m}|\cdot|\vec{n}|}$$

$$\vec{a} \cdot \vec{b} \stackrel{\downarrow}{=} 0$$
 $(\vec{m} + 2\vec{n})$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

 $\vec{a} \cdot (\vec{m} + 2\vec{n}) \cdot$

a)
$$\triangleleft(\vec{m},\vec{n})=?$$

$$\cos\left(\vec{m},\vec{n}\,
ight) = rac{ec{m}\cdotec{n}}{|ec{m}|\cdot|ec{n}|}$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft(\vec{m},\vec{n})=?$$

$$\cos\left(ec{m},ec{n}
ight)=rac{ec{m}\cdotec{n}}{|ec{m}|\cdot|ec{n}|}$$

$$\vec{a} \cdot \vec{b} \stackrel{\checkmark}{=} 0$$
$$(\vec{m} + 2\vec{n}) \cdot (5\vec{m} - 4\vec{n})$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

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$$\cos\left(ec{m},ec{n}
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$$(\vec{m} + 2\vec{n}) \cdot (5\vec{m} - 4\vec{n}) = 0$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft (\vec{m}, \vec{n}) = ?$$

$$\cos\left(\vec{m},\vec{n}\right) = \frac{\vec{m}\cdot\vec{n}}{|\vec{m}|}$$

a)
$$\langle (\vec{m}, \vec{n}) = ?$$

$$\cos(\vec{m}, \vec{n}) = \frac{\vec{m} \cdot \vec{n}}{|\vec{m}| \cdot |\vec{n}|}$$

$$\vec{a} \cdot \vec{b} = 0$$

$$(\vec{m} + 2\vec{n}) \cdot (5\vec{m} - 4\vec{n}) = 0$$

$$5\vec{m}^2$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft (\vec{m}, \vec{n}) = ?$$

$$\cos\left(\vec{m},\vec{n}\,\right) = \frac{\vec{m}\cdot\vec{n}}{|\vec{m}|\cdot|\vec{n}|}$$

$$\vec{a} \cdot \vec{b} \stackrel{\checkmark}{=} 0$$

$$(\vec{m} + 2\vec{n}) \cdot (5\vec{m} - 4\vec{n}) = 0$$

$$6\vec{m}^2 - 4\vec{m}\vec{n}$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft(\vec{m},\vec{n})=?$$

$$\cos\left(ec{m},ec{n}
ight)=rac{ec{m}\cdotec{n}}{|ec{m}|\cdot|ec{n}|}$$

$$\vec{a} \cdot \vec{b} = 0$$

$$(\vec{m} + 2\vec{n}) \cdot (5\vec{m} - 4\vec{n}) = 0$$

$$5\vec{m}^2 - 4\vec{m}\vec{n} + 10\vec{m}\vec{n}$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft(\vec{m},\vec{n})=?$$

$$\cos\left(\vec{m},\vec{n}
ight) = rac{ec{m}\cdotec{n}}{|ec{m}|\cdot|ec{n}|}$$

$$\vec{a} \cdot \vec{b} = 0$$

$$(\vec{m} + 2\vec{n}) \cdot (5\vec{m} - 4\vec{n}) = 0$$

$$5\vec{m}^2 - 4\vec{m}\vec{n} + 10\vec{m}\vec{n} - 8\vec{n}^2$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft (\vec{m}, \vec{n}) = ?$$

$$\cos\left(\vec{m},\vec{n}
ight) = rac{ec{m}\cdotec{n}}{|ec{m}|\cdot|ec{n}|}$$

$$\vec{a} \cdot \vec{b} = 0$$

$$(\vec{m} + 2\vec{n}) \cdot (5\vec{m} - 4\vec{n}) = 0$$

$$5\vec{m}^2 - 4\vec{m}\vec{n} + 10\vec{m}\vec{n} - 8\vec{n}^2 = 0$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft(\vec{m},\vec{n})=?$$

$$\cos(\vec{m}, \vec{n}) = \frac{\vec{m} \cdot \vec{n}}{|\vec{m}| \cdot |\vec{n}|}$$

$$\vec{a} \cdot \vec{b} = 0$$

$$(\vec{m} + 2\vec{n}) \cdot (5\vec{m} - 4\vec{n}) = 0$$

$$5\vec{m}^2 - 4\vec{m}\vec{n} + 10\vec{m}\vec{n} - 8\vec{n}^2 = 0$$

$$5|\vec{m}|^2$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft(\vec{m},\vec{n})=?$$

$$\cos\left(\vec{m},\vec{n}\right) = \frac{\vec{m}\cdot\vec{n}}{|\vec{m}|\cdot|\vec{n}|}$$

$$\vec{a} \cdot \vec{b} = 0$$

$$(\vec{m} + 2\vec{n}) \cdot (5\vec{m} - 4\vec{n}) = 0$$

$$5\vec{m}^2 - 4\vec{m}\vec{n} + 10\vec{m}\vec{n} - 8\vec{n}^2 = 0$$

$$5|\vec{m}|^2 + 6\vec{m}\vec{n}$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft(\vec{m},\vec{n})=?$$

$$\cos\left(\vec{m},\vec{n}\right) = \frac{\vec{m}\cdot\vec{n}}{|\vec{m}|\cdot|\vec{n}|}$$

$$\vec{a} \cdot \vec{b} = 0$$

$$(\vec{m} + 2\vec{n}) \cdot (5\vec{m} - 4\vec{n}) = 0$$

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$$5|\vec{m}|^2 + 6\vec{m}\vec{n} - 8|\vec{n}|^2$$

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$$5|\vec{m}|^2 + 6\vec{m}\vec{n} - 8|\vec{n}|^2 = 0$$

$$5 \cdot 1^2$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

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$$5 \cdot 1^2 + 6\vec{m}\vec{n}$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

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$$6\vec{m}\vec{n} - 3 = 0$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
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$$\cos\left(\vec{m},\vec{n}\right) = \frac{\vec{m}\cdot\vec{n}}{|\vec{m}|\cdot|\vec{n}|}$$

$$|\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$
 $\vec{a} \cdot \vec{b} = 0$
 $(\vec{m} + 2\vec{n}) \cdot (5\vec{m} - 4\vec{n}) = 0$
 $5\vec{m}^2 - 4\vec{m}\vec{n} + 10\vec{m}\vec{n} - 8\vec{n}^2 = 0$
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 $6\vec{m}\vec{n} - 3 = 0$
 $\vec{m}\vec{n} = \frac{1}{2}$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

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$$\cos\left(\vec{m},\vec{n}\right) = \frac{\vec{m}\cdot\vec{n}}{|\vec{m}|\cdot|\vec{n}|}$$

$$|\vec{n}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

$$\vec{a} \cdot \vec{b} = 0$$

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$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

a)
$$\triangleleft(\vec{m},\vec{n})=?$$

$$\cos\left(\vec{m},\vec{n}\right) = \frac{\vec{m}\cdot\vec{n}}{|\vec{m}|\cdot|\vec{n}|}$$

$$\cos(\vec{m},\vec{n}) = ---$$

$$\vec{a} \cdot \vec{b} \stackrel{\checkmark}{=} 0$$

$$(\vec{m} + 2\vec{n}) \cdot (5\vec{m} - 4\vec{n}) = 0$$

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$$\cos(\vec{m}, \vec{n}) = \frac{\vec{m} \cdot \vec{n}}{|\vec{m}| \cdot |\vec{n}|}$$
$$\cos(\vec{m}, \vec{n}) = \frac{\frac{1}{2}}{|\vec{m}|}$$

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$$\cos(\vec{m}, \vec{n}) = \frac{\frac{1}{2}}{1 \cdot 1}$$

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$$\cos(\vec{m}, \vec{n}) = \frac{\frac{1}{2}}{1 \cdot 1}$$
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$$\triangleleft (\vec{m}, \vec{n}) = ?$$

$$\cos(\vec{m}, \vec{n}) = \frac{\vec{m} \cdot \vec{n}}{|\vec{m}| \cdot |\vec{n}|}$$

$$\cos(\vec{m}, \vec{n}) = \frac{\frac{1}{2}}{1 \cdot 1}$$

$$\cos(\vec{m}, \vec{n}) = \frac{1}{2}$$

$$\sphericalangle(\vec{m}, \vec{n}) = 60^{\circ}$$

$$|\vec{n}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp b$$

$$|\vec{a} \cdot \vec{b} = 0$$

$$(\vec{m} + 2\vec{n}) \cdot (5\vec{m} - 4\vec{n}) = 0$$

$$5\vec{m}^2 - 4\vec{m}\vec{n} + 10\vec{m}\vec{n} - 8\vec{n}^2 = 0$$

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$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

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$$\cos(\vec{m}, \vec{n}) = \frac{\vec{m} \cdot \vec{n}}{|\vec{m}| \cdot |\vec{n}|}$$
$$\cos(\vec{m}, \vec{n}) = \frac{\frac{1}{2}}{1 \cdot 1}$$

$$\sphericalangle(\vec{m},\vec{n})=60^\circ$$

 $\cos\left(\vec{m},\vec{n}\right)=\frac{1}{2}$

$$\vec{n}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

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$$(\vec{m} + 2\vec{n}) \cdot (5\vec{m} - 4\vec{n}) = 0$$

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b)
$$|\vec{a} + \vec{b}| = ?$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

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$$\vec{a} + \vec{b} =$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

b)
$$|\vec{a} + \vec{b}| = ?$$

$$\vec{a} + \vec{b} = (\vec{m} + 2\vec{n})$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

b)
$$|\vec{a} + \vec{b}| = ?$$

$$\vec{a} + \vec{b} = (\vec{m} + 2\vec{n}) +$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

b)
$$|\vec{a} + \vec{b}| = ?$$

$$\vec{a} + \vec{b} = (\vec{m} + 2\vec{n}) + (5\vec{m} - 4\vec{n})$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

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$$|\vec{a} + \vec{b}| = ?$$

$$\vec{a} + \vec{b} = (\vec{m} + 2\vec{n}) + (5\vec{m} - 4\vec{n}) = 6\vec{m} - 2\vec{n}$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$
b) $|\vec{a} + \vec{b}| = ?$
 $\vec{a} + \vec{b} = (\vec{m} + 2\vec{n}) + (5\vec{m} - 4\vec{n}) = 6\vec{m} - 2\vec{n}$
 $|\vec{a} + \vec{b}|^2 =$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$
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 $|\vec{a} + \vec{b}|^2 = (\vec{a} + \vec{b})^2$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

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 $\vec{a} + \vec{b} = (\vec{m} + 2\vec{n}) + (5\vec{m} - 4\vec{n}) = 6\vec{m} - 2\vec{n}$
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$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

b) $|\vec{a} + \vec{b}| = ?$
 $\vec{a} + \vec{b} = (\vec{m} + 2\vec{n}) + (5\vec{m} - 4\vec{n}) = 6\vec{m} - 2\vec{n}$
 $|\vec{a} + \vec{b}|^2 = (\vec{a} + \vec{b})^2 = (6\vec{m} - 2\vec{n})^2 = 36\vec{m}^2$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

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 $\vec{a} + \vec{b} = (\vec{m} + 2\vec{n}) + (5\vec{m} - 4\vec{n}) = 6\vec{m} - 2\vec{n}$
 $|\vec{a} + \vec{b}|^2 = (\vec{a} + \vec{b})^2 = (6\vec{m} - 2\vec{n})^2 =$
 $= 36\vec{m}^2 - 24\vec{m}\vec{n}$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$

b) $|\vec{a} + \vec{b}| = ?$
 $\vec{a} + \vec{b} = (\vec{m} + 2\vec{n}) + (5\vec{m} - 4\vec{n}) = 6\vec{m} - 2\vec{n}$
 $|\vec{a} + \vec{b}|^2 = (\vec{a} + \vec{b})^2 = (6\vec{m} - 2\vec{n})^2 =$
 $= 36\vec{m}^2 - 24\vec{m}\vec{n} + 4\vec{n}^2$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$
b) $|\vec{a} + \vec{b}| = ?$

$$\vec{a} + \vec{b} = (\vec{m} + 2\vec{n}) + (5\vec{m} - 4\vec{n}) = 6\vec{m} - 2\vec{n}$$
 $|\vec{a} + \vec{b}|^2 = (\vec{a} + \vec{b})^2 = (6\vec{m} - 2\vec{n})^2 =$

$$= 36\vec{m}^2 - 24\vec{m}\vec{n} + 4\vec{n}^2 =$$

$$= 36|\vec{m}|^2$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$
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$$\vec{a} + \vec{b} = (\vec{m} + 2\vec{n}) + (5\vec{m} - 4\vec{n}) = 6\vec{m} - 2\vec{n}$$
 $|\vec{a} + \vec{b}|^2 = (\vec{a} + \vec{b})^2 = (6\vec{m} - 2\vec{n})^2 =$

$$= 36\vec{m}^2 - 24\vec{m}\vec{n} + 4\vec{n}^2 =$$

$$= 36|\vec{m}|^2 - 24\vec{m}\vec{n}$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$
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$$\vec{a} + \vec{b} = (\vec{m} + 2\vec{n}) + (5\vec{m} - 4\vec{n}) = 6\vec{m} - 2\vec{n}$$
 $|\vec{a} + \vec{b}|^2 = (\vec{a} + \vec{b})^2 = (6\vec{m} - 2\vec{n})^2 =$

$$= 36\vec{m}^2 - 24\vec{m}\vec{n} + 4\vec{n}^2 =$$

$$= 36|\vec{m}|^2 - 24\vec{m}\vec{n} + 4|\vec{n}|^2$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$
b) $|\vec{a} + \vec{b}| = ?$

$$\vec{a} + \vec{b} = (\vec{m} + 2\vec{n}) + (5\vec{m} - 4\vec{n}) = 6\vec{m} - 2\vec{n}$$
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$$= 36|\vec{m}|^2 - 24\vec{m}\vec{n} + 4|\vec{n}|^2 =$$

$$= 36 \cdot 1^2$$

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$$= 36 \cdot 1^2 - 24 \cdot$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$
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$$= 36|\vec{m}|^2 - 24\vec{m}\vec{n} + 4|\vec{n}|^2 =$$

$$= 36 \cdot 1^2 - 24 \cdot \frac{1}{2}$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$
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$$= 36 \cdot 1^2 - 24 \cdot \frac{1}{2} + 4 \cdot 1^2 = 28$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$
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$$\left|\vec{a} + \vec{b}\right|^2 = 28$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$
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$$= 36 \cdot 1^2 - 24 \cdot \frac{1}{2} + 4 \cdot 1^2 = 28$$

$$\left| \vec{a} + \vec{b} \right|^2 = 28 \quad \text{---} \quad \left| \vec{a} + \vec{b} \right| = \sqrt{28}$$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$
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$$= 36 \cdot 1^2 - 24 \cdot \frac{1}{2} + 4 \cdot 1^2 = 28$$

$$|\vec{a} + \vec{b}|^2 = 28$$
 -www $|\vec{a} + \vec{b}| = \sqrt{28}$ -www $|\vec{a} + \vec{b}| = 2\sqrt{7}$

$$\vec{a} = \vec{m} + 2\vec{n}, \quad \vec{b} = 5\vec{m} - 4\vec{n}, \quad |\vec{m}| = 1, \quad |\vec{n}| = 1, \quad \vec{a} \perp \vec{b}$$
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$$= 36 \cdot 1^2 - 24 \cdot \frac{1}{2} + 4 \cdot 1^2 = 28$$

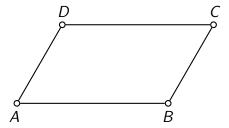
$$\left| \vec{a} + \vec{b} \right|^2 = 28 \quad \text{------} \quad \left| \vec{a} + \vec{b} \right| = \sqrt{28} \quad \text{------} \quad \left| \vec{a} + \vec{b} \right| = 2\sqrt{7}$$

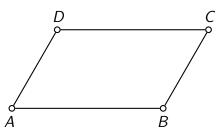
peti zadatak

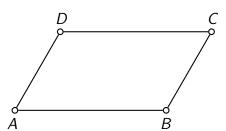
Zadatak 5

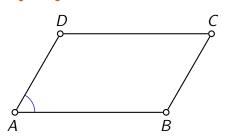
Zadan je paralelogram ABCD s duljinama stranica |AB|=5, |AD|=3 i kutom $\triangleleft DAB=60^\circ$. Na dijagonali \overline{AC} zadana je točka E takva da je $|AE|=\frac{4}{5}|AC|$.

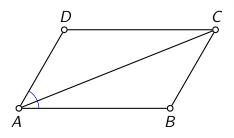
- a) Prikažite vektor \overrightarrow{BE} u bazi $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$. Koje su koordinate vektora \overrightarrow{BE} u bazi \mathcal{B} ?
- b) Izračunajte skalarni produkt vektora \overrightarrow{BE} i \overrightarrow{BA} .
- c) Izračunajte duljinu vektora \overrightarrow{BE} .
- d) *Izračunajte kut ⊲ABE*.

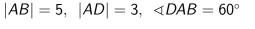


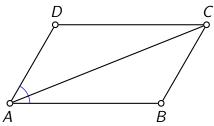






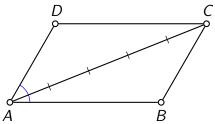




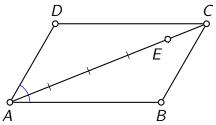


$$|AB| = 5, |AD| = 3, < DAB = 60^{\circ}$$

 $|AE| = \frac{4}{5}|AC|$

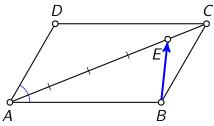


$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC|$

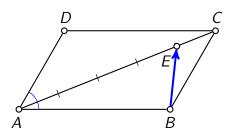


$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

 $|AE| = \frac{4}{5}|AC|$



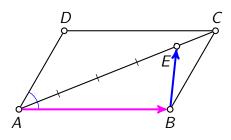
$$|AB| = 5, |AD| = 3, < DAB = 60^{\circ}$$
 $|AE| = \frac{4}{5}|AC|$



$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC|$

$$|AE| = \frac{4}{5}|AC|$$

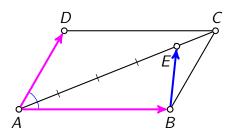
Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$



$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC|$

$$|AE| = \frac{4}{5}|AC|$$

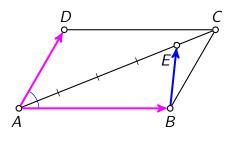
Zadana baza:
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$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
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$$AE|=\frac{4}{5}|AC|$$

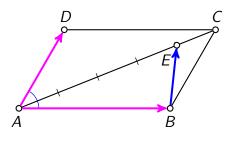
Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$



$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC|$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

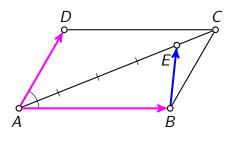
a)
$$\overrightarrow{BE} =$$



$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC|$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

a)
$$\overrightarrow{BE} = \overrightarrow{BA}$$

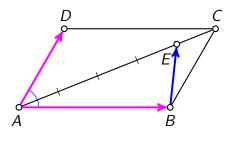


$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC|$

$$|AE| = \frac{4}{5}|AC|$$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

a)
$$\overrightarrow{BE} = \overrightarrow{BA} +$$

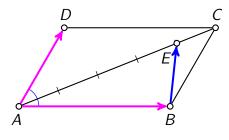


$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC|$

$$|AE| = \frac{4}{5}|AC|$$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

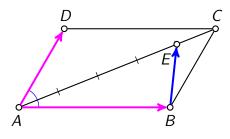
a)
$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE}$$



$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC|$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

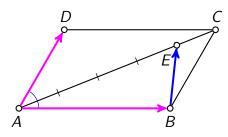
a)
$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB}$$



$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \xrightarrow{\bullet} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

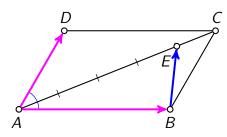
a)
$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \overrightarrow{AB}$$



$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \xrightarrow{\bullet} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

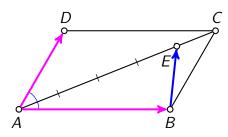
a)
$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC}$$



$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \xrightarrow{\bullet} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

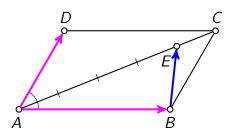
a)
$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC} = -\overrightarrow{AB}$$



$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \xrightarrow{\bullet} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

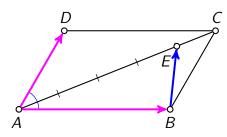
a)
$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC} = -\overrightarrow{AB} + \frac{4}{5}($$



$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \xrightarrow{\text{even}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

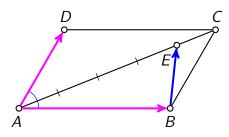
a)
$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC} = -\overrightarrow{AB} + \frac{4}{5}(\overrightarrow{AB})$$



$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \xrightarrow{\bullet} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

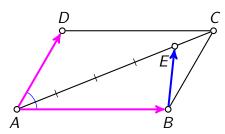
$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC} = -\overrightarrow{AB} + \frac{4}{5}\left(\overrightarrow{AB} + \overrightarrow{AB}\right)$$



$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \xrightarrow{\bullet} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC} = -\overrightarrow{AB} + \frac{4}{5}\left(\overrightarrow{AB} + \overrightarrow{AD}\right)$$

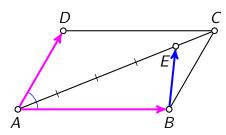


$$|AB| = 5$$
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Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC} = -\overrightarrow{AB} + \frac{4}{5}\left(\overrightarrow{AB} + \overrightarrow{AD}\right) =$$

$$= -\overrightarrow{AB}$$

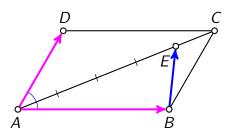


$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \xrightarrow{\bullet} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC} = -\overrightarrow{AB} + \frac{4}{5}\left(\overrightarrow{AB} + \overrightarrow{AD}\right) =$$

$$= -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AB}$$

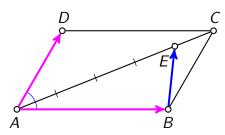


$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \longrightarrow \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

a)
$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC} = -\overrightarrow{AB} + \frac{4}{5}\left(\overrightarrow{AB} + \overrightarrow{AD}\right) =$$

$$= -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$

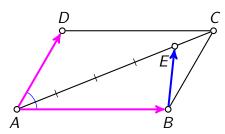


$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \longrightarrow \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC} = -\overrightarrow{AB} + \frac{4}{5}\left(\overrightarrow{AB} + \overrightarrow{AD}\right) =$$

$$= -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} = -\frac{1}{5}\overrightarrow{AB}$$

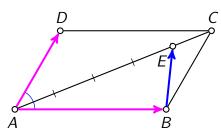


$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \longrightarrow \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC} = -\overrightarrow{AB} + \frac{4}{5}\left(\overrightarrow{AB} + \overrightarrow{AD}\right) =$$

$$= -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$



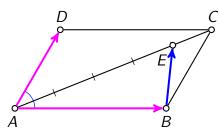
$$|AB| = 5$$
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 $|AE| = \frac{4}{5}|AC| \longrightarrow \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

(a)
$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC} = -\overrightarrow{AB} + \frac{4}{5}\left(\overrightarrow{AB} + \overrightarrow{AD}\right) =$$

$$= -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$



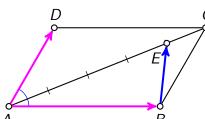
$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \longrightarrow \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

a)
$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC} = -\overrightarrow{AB} + \frac{4}{5}\left(\overrightarrow{AB} + \overrightarrow{AD}\right) =$$

$$= -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \xrightarrow{\text{www}} \overrightarrow{BE} = \left(-\frac{1}{5}, \frac{4}{5}\right)$$



|AB| = 5, |AD| = 3, $\triangleleft DAB = 60^{\circ}$ $|AE| = \frac{4}{5}|AC| \xrightarrow{\bullet} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$ Zadana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC} = -\overrightarrow{AB} + \frac{4}{5}\left(\overrightarrow{AB} + \overrightarrow{AD}\right) =$$

$$= -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \longrightarrow \overrightarrow{BE} = \left(-\frac{1}{5}, \frac{4}{5}\right)$$

koordinate vektora \overrightarrow{BE} u bazi $\mathcal B$

Rjesenje
$$|AB| = 5$$
, $|AD| = 3$, $|AB| = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC|$ www $|\overrightarrow{AE}| = \frac{4}{5}|\overrightarrow{AC}|$

Zadana baza: $|B| = (\overrightarrow{AB}, \overrightarrow{AD})$
 $|\overrightarrow{BE}| = -\frac{1}{5}|\overrightarrow{AB}| + \frac{4}{5}|\overrightarrow{AD}|$

$$\overrightarrow{BE} = \overrightarrow{BA} + \overrightarrow{AE} = -\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AC} = -\overrightarrow{AB} + \frac{4}{5}\left(\overrightarrow{AB} + \overrightarrow{AD}\right) =$$

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koordinate vektora \overrightarrow{BE} u bazi $\mathcal B$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana baza: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$

b)

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{AE} = \frac{4}{5}\overrightarrow{AD}$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$

b)
$$\overrightarrow{BE} \cdot \overrightarrow{BA} =$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana baza: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$

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$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

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Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

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$$\overrightarrow{BE} \cdot \overrightarrow{BA} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \right) \cdot \left(-\overrightarrow{AB} \right)$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

Zadana baza:
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$$\overrightarrow{BE} \cdot \overrightarrow{BA} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \right) \cdot \left(-\overrightarrow{AB} \right) = \frac{1}{5}\overrightarrow{AB}^2$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$

b)
$$\overrightarrow{BE} \cdot \overrightarrow{BA} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \right) \cdot \left(-\overrightarrow{AB} \right) = \frac{1}{5}\overrightarrow{AB}^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD}$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{AB} \overrightarrow{AB}$$

Zadana baza:
$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

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$$\overrightarrow{BE} \cdot \overrightarrow{BA} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \right) \cdot \left(-\overrightarrow{AB} \right) = \frac{1}{5}\overrightarrow{AB}^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD} =$$

$$= \frac{1}{5} |\overrightarrow{AB}|^2$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{AD}$$

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$$\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

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$$= \frac{1}{5}|\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD}$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

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$$|AB| = 5, |AD| = 3, |AD| = 3, |AD| = 60^{\circ}$$

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$$= \frac{1}{5}|\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD}$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} =$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

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$$= \frac{1}{5} |\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD}$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = |\overrightarrow{AB}|$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$|AB| = 5, |AD| = 3, |AD| = 3, |AD| = 60^{\circ}$$

Zadana baza:
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$$= \frac{1}{5} |\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD}$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = |\overrightarrow{AB}| \cdot |\overrightarrow{AD}|$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

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$$= \frac{1}{5} |\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD}$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = |\overrightarrow{AB}| \cdot |\overrightarrow{AD}| \cdot \cos(\overrightarrow{AB}, \overrightarrow{AD})$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

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$$= \frac{1}{5} |\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD}$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = |\overrightarrow{AB}| \cdot |\overrightarrow{AD}| \cdot \cos(\overrightarrow{AB}, \overrightarrow{AD}) = 5$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana \ baza: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$

b)
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$$= \frac{1}{5}|\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD}$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = |\overrightarrow{AB}| \cdot |\overrightarrow{AD}| \cdot \cos(\overrightarrow{AB}, \overrightarrow{AD}) = 5 \cdot 3$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

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$$= \frac{1}{5} |\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD}$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = |\overrightarrow{AB}| \cdot |\overrightarrow{AD}| \cdot \cos(\overrightarrow{AB}, \overrightarrow{AD}) = 5 \cdot 3 \cdot \cos 60^{\circ}$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana baza: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$

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$$\overrightarrow{BE} \cdot \overrightarrow{BA} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right) \cdot \left(-\overrightarrow{AB}\right) = \frac{1}{5}\overrightarrow{AB}^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD} =$$

$$= \frac{1}{5}|\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD}$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = |\overrightarrow{AB}| \cdot |\overrightarrow{AD}| \cdot \cos(\overrightarrow{AB}, \overrightarrow{AD}) = 5 \cdot 3 \cdot \cos 60^{\circ} = \frac{15}{2}$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

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$$= \frac{1}{5}|\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{1}{5} \cdot$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = |\overrightarrow{AB}| \cdot |\overrightarrow{AD}| \cdot \cos(\overrightarrow{AB}, \overrightarrow{AD}) = 5 \cdot 3 \cdot \cos 60^{\circ} = \frac{15}{2}$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

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$$= \frac{1}{5}|\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{1}{5} \cdot 5^2$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = |\overrightarrow{AB}| \cdot |\overrightarrow{AD}| \cdot \cos(\overrightarrow{AB}, \overrightarrow{AD}) = 5 \cdot 3 \cdot \cos 60^{\circ} = \frac{15}{2}$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

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$$\overrightarrow{BE} \cdot \overrightarrow{BA} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right) \cdot \left(-\overrightarrow{AB}\right) = \frac{1}{5}\overrightarrow{AB}^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD} =$$

$$= \frac{1}{5}|\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{1}{5} \cdot 5^2 - \frac{4}{5} \cdot 6$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = |\overrightarrow{AB}| \cdot |\overrightarrow{AD}| \cdot \cos(\overrightarrow{AB}, \overrightarrow{AD}) = 5 \cdot 3 \cdot \cos 60^{\circ} = \frac{15}{2}$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

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$$= \frac{1}{5}\left|\overrightarrow{AB}\right|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{1}{5} \cdot 5^2 - \frac{4}{5} \cdot \frac{15}{2}$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = |\overrightarrow{AB}| \cdot |\overrightarrow{AD}| \cdot \cos(\overrightarrow{AB}, \overrightarrow{AD}) = 5 \cdot 3 \cdot \cos 60^{\circ} = \frac{15}{2}$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

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b)
$$\overrightarrow{BE} \cdot \overrightarrow{BA} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right) \cdot \left(-\overrightarrow{AB}\right) = \frac{1}{5}\overrightarrow{AB}^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD} =$$

$$= \frac{1}{5}|\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{1}{5} \cdot 5^2 - \frac{4}{5} \cdot \frac{15}{2} = -1$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = |\overrightarrow{AB}| \cdot |\overrightarrow{AD}| \cdot \cos(\overrightarrow{AB}, \overrightarrow{AD}) = 5 \cdot 3 \cdot \cos 60^{\circ} = \frac{15}{2}$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana baza: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

b)
$$\overrightarrow{BE} \cdot \overrightarrow{BA} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right) \cdot \left(-\overrightarrow{AB}\right) = \frac{1}{5}\overrightarrow{AB}^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD} =$$

$$= \frac{1}{5}|\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{1}{5} \cdot 5^2 - \frac{4}{5} \cdot \frac{15}{2} = -1$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = |\overrightarrow{AB}| \cdot |\overrightarrow{AD}| \cdot \cos(\overrightarrow{AB}, \overrightarrow{AD}) = 5 \cdot 3 \cdot \cos 60^{\circ} = \frac{15}{2}$$

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$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana baza: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

b)
$$\overrightarrow{BE} \cdot \overrightarrow{BA} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right) \cdot \left(-\overrightarrow{AB}\right) = \frac{1}{5}\overrightarrow{AB}^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD} =$$

$$= \frac{1}{5}|\overrightarrow{AB}|^2 - \frac{4}{5}\overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{1}{5} \cdot 5^2 - \frac{4}{5} \cdot \frac{15}{2} = -1$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = |\overrightarrow{AB}| \cdot |\overrightarrow{AD}| \cdot \cos(\overrightarrow{AB}, \overrightarrow{AD}) = 5 \cdot 3 \cdot \cos 60^{\circ} = \frac{15}{2}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

c)

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

 $|\overrightarrow{BE}|^2 =$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

c)

 $|\overrightarrow{BE}|^2 = \overrightarrow{BE}^2$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ} |AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Z} \text{adana baza: } \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$\overrightarrow{BE}|^{2} = \overrightarrow{BE}|^{2} = (-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD})^{2}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana \ baza: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}|^2 = \overrightarrow{BE}^2 = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^2 =$$

$$= \frac{1}{25}\overrightarrow{AB}^2$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana \ baza: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}|^2 = \overrightarrow{BE}^2 = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^2 =$$

$$= \frac{1}{25}\overrightarrow{AB}^2 - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$
Zadana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}|^2 = \overrightarrow{BE}^2 = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^2 =$$

$$= \frac{1}{25}\overrightarrow{AB}^2 - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}\overrightarrow{AD}^2$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, \ |AD| = 3, \ \langle DAB = 60^{\circ} \rangle$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}|^{2} = \overrightarrow{BE}^{2} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^{2} =$$

$$= \frac{1}{25}\overrightarrow{AB}^{2} - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}\overrightarrow{AD}^{2} =$$

 $=\frac{1}{25}\left|\overrightarrow{AB}\right|^2$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, \ |AD| = 3, \ \langle DAB = 60^{\circ} \rangle$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}|^{2} = \overrightarrow{BE}^{2} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^{2} =$$

$$|\overrightarrow{BE}|^2 = \overrightarrow{BE}^2 = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^2 =$$

$$= \frac{1}{25}\overrightarrow{AB}^2 - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}\overrightarrow{AD}^2 =$$

$$= \frac{1}{25}|\overrightarrow{AB}|^2 - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, \ |AD| = 3, \ \langle DAB = 60^{\circ} \rangle$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana \ baza: \ \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}|^{2} = \overrightarrow{BE}^{2} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^{2} =$$

$$|\overrightarrow{BE}|^2 = \overrightarrow{BE}^2 = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^2 =$$

$$= \frac{1}{25}\overrightarrow{AB}^2 - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}\overrightarrow{AD}^2 =$$

$$= \frac{1}{25}|\overrightarrow{AB}|^2 - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}|\overrightarrow{AD}|^2$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, \ |AD| = 3, \ \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{Avery }} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana \ baza: \ \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}|^{2} = \overrightarrow{BE}^{2} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^{2} =$$

$$= \frac{1}{25}\overrightarrow{AB}^{2} - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}\overrightarrow{AD}^{2} =$$

 $=\frac{1}{25}\left|\overrightarrow{AB}\right|^2-\frac{8}{25}\overrightarrow{AB}\cdot\overrightarrow{AD}+\frac{16}{25}\left|\overrightarrow{AD}\right|^2=$

 $=\frac{1}{25}$.

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, \ |AD| = 3, \ \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}|^{2} = \overrightarrow{BE}^{2} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^{2} = 1$$

$$1 \overrightarrow{AB2} = 8 \overrightarrow{AB} = \overrightarrow{AB} + 16 \overrightarrow{AB2}$$

$$= \frac{1}{25}\overrightarrow{AB}^2 - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}\overrightarrow{AD}^2 =$$

$$= \frac{1}{25}|\overrightarrow{AB}|^2 - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}|\overrightarrow{AD}|^2 =$$

$$= \frac{1}{25} \cdot 5^2$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, \ |AD| = 3, \ \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{AC}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana \ baza: \ \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$\overrightarrow{BE}|^{2} = \overrightarrow{BE}|^{2} = (-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD})^{2} =$$

$$|\overrightarrow{BE}|^2 = \overrightarrow{BE}^2 = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^2 =$$

$$= \frac{1}{25}\overrightarrow{AB}^2 - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}\overrightarrow{AD}^2 =$$

$$= \frac{1}{25}|\overrightarrow{AB}|^2 - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}|\overrightarrow{AD}|^2 =$$

$$= \frac{1}{25}|\overrightarrow{AB}|^2 - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}|\overrightarrow{AD}|^2 =$$

$$= \frac{1}{25} \cdot 5^2 - \frac{8}{25} \cdot$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, \ |AD| = 3, \ \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}|^{2} = \overrightarrow{BE}^{2} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^{2} =$$

$$|B\dot{E}|^{2} = B\dot{E}^{2} = \left(-\frac{1}{5}A\dot{B} + \frac{4}{5}A\dot{D}\right) =$$

$$= \frac{1}{25}\overrightarrow{AB}^{2} - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}\overrightarrow{AD}^{2} =$$

$$= \frac{1}{25}|\overrightarrow{AB}|^{2} - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}|\overrightarrow{AD}|^{2} =$$

$$= \frac{1}{25} \cdot 5^{2} - \frac{8}{25} \cdot \frac{15}{2}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, \ |AD| = 3, \ \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}|^{2} = \overrightarrow{BE}^{2} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^{2} =$$

$$|\overrightarrow{BE}|^{2} = \overrightarrow{BE}^{2} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^{2} =$$

$$= \frac{1}{25}\overrightarrow{AB}^{2} - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}\overrightarrow{AD}^{2} =$$

$$= \frac{1}{25}|\overrightarrow{AB}|^{2} - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}|\overrightarrow{AD}|^{2} =$$

$$= \frac{1}{25}|\overrightarrow{AB}|^{2} - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}|\overrightarrow{AD}|^{2} =$$

$$= \frac{1}{25} \cdot 5^{2} - \frac{8}{25} \cdot \frac{15}{2} + \frac{16}{25} \cdot$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}|^{2} = \overrightarrow{BE}^{2} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^{2} =$$

$$|B\vec{E}|^{2} = B\vec{E}^{2} = \left(-\frac{1}{5}A\vec{B} + \frac{4}{5}A\vec{D}\right) =$$

$$= \frac{1}{25}\overrightarrow{AB}^{2} - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}\overrightarrow{AD}^{2} =$$

$$= \frac{1}{25}|\overrightarrow{AB}|^{2} - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}|\overrightarrow{AD}|^{2} =$$

$$= \frac{1}{25} \cdot 5^{2} - \frac{8}{25} \cdot \frac{15}{2} + \frac{16}{25} \cdot 3^{2}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, \ |AD| = 3, \ \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{AVA}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana \ baza: \ \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}|^{2} = \overrightarrow{BE}^{2} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^{2} = 1$$

$$|\overrightarrow{BE}|^{2} = \overrightarrow{BE}^{2} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^{2} =$$

$$= \frac{1}{25}\overrightarrow{AB}^{2} - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}\overrightarrow{AD}^{2} =$$

$$= \frac{1}{25}|\overrightarrow{AB}|^{2} - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}|\overrightarrow{AD}|^{2} =$$

$$= \frac{1}{25} \cdot 5^{2} - \frac{8}{25} \cdot \frac{15}{2} + \frac{16}{25} \cdot 3^{2} = \frac{109}{25}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, \ |AD| = 3, \ \langle DAB = 60^{\circ} \rangle$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}|^{2} = \overrightarrow{BE}^{2} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^{2} =$$

$$= \frac{1}{25} \overrightarrow{AB}^2 - \frac{8}{25} \overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25} \overrightarrow{AD}^2 =$$

$$= \frac{1}{25} |\overrightarrow{AB}|^2 - \frac{8}{25} \overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25} |\overrightarrow{AD}|^2 =$$

$$= \frac{1}{25} \cdot 5^2 - \frac{8}{25} \cdot \frac{15}{2} + \frac{16}{25} \cdot 3^2 = \frac{109}{25}$$

 $|\overrightarrow{BE}|^2 = \frac{109}{25}$

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$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, |AD| = 3, \langle DAB = 60^{\circ} |AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$\overrightarrow{BE}|^{2} = \overrightarrow{BE}|^{2} = (-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD})^{2} = \frac{1}{2}$$

$$\overrightarrow{AB} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}|^2 = \overrightarrow{BE}^2 = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^2 =$$

$$= \frac{1}{25}\overrightarrow{AB}^2 - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}\overrightarrow{AD}^2 =$$

$$= \frac{1}{25}|\overrightarrow{AB}|^2 - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}|\overrightarrow{AD}|^2 =$$

$$= \frac{1}{25} \cdot 5^2 - \frac{8}{25} \cdot \frac{15}{2} + \frac{16}{25} \cdot 3^2 = \frac{109}{25}$$
$$|\overrightarrow{BE}|^2 = \frac{109}{25} \xrightarrow{\bullet} |\overrightarrow{BE}| = \frac{\sqrt{109}}{5}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, |AD| = 3, \langle DAB = 60^{\circ} |AE| = \frac{4}{5}|AC| \xrightarrow{\text{AVA}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{AE} = \frac{4}{5}|AC| \xrightarrow{\text{AVA}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$\overrightarrow{BE}|^{2} = \overrightarrow{BE}^{2} = \left(-\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}\right)^{2} = |\overrightarrow{BE}| = \frac{\sqrt{109}}{5}$$

$$= \frac{1}{25}\overrightarrow{AB}^{2} - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}\overrightarrow{AD}^{2} =$$

$$= \frac{1}{25}|\overrightarrow{AB}|^{2} - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}|\overrightarrow{AD}|^{2} =$$

$$= \frac{1}{25}|\overrightarrow{AB}|^{2} - \frac{8}{25}\overrightarrow{AB} \cdot \overrightarrow{AD} + \frac{16}{25}|\overrightarrow{AD}|^{2} =$$

$$= \frac{1}{25} \cdot 5^{2} - \frac{8}{25} \cdot \frac{15}{2} + \frac{16}{25} \cdot 3^{2} = \frac{109}{25}$$

$$|\overrightarrow{BE}|^{2} = \frac{109}{25} \xrightarrow{\text{AVA}} |\overrightarrow{BE}| = \frac{\sqrt{109}}{5}$$

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$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}| = \frac{\sqrt{109}}{5}$$

d)

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$\overrightarrow{BB} \cdot \overrightarrow{BA} = -1$$

$$\overrightarrow{BB} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \xrightarrow{\sim} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza:
$$\mathcal{B} = (A\dot{B}, A\dot{D})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$\overrightarrow{A}$$
 \overrightarrow{B} \overrightarrow{B} \overrightarrow{B} $\overrightarrow{BE} = \frac{\sqrt{109}}{5}$

d)
$$\triangleleft ABE = ?$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ} \rangle$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}| = \frac{\sqrt{109}}{5}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}| = \frac{\sqrt{109}}{5}$$

$$\varphi = \triangleleft ABE = \triangleleft (\overrightarrow{BA}, \overrightarrow{BE})$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ} \rangle$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Z} \text{adana baza: } \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}| = \frac{\sqrt{109}}{5}$$

$$\mathsf{d}) \triangleleft ABE = ?$$

$$\varphi = \sphericalangle \textit{ABE} = \sphericalangle \big(\overrightarrow{\textit{BA}}, \overrightarrow{\textit{BE}}\big)$$

$$\cos \varphi =$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

d)
$$\triangleleft ABE = ?$$

$$\varphi = \sphericalangle \textit{ABE} = \sphericalangle \big(\overrightarrow{\textit{BA}}, \overrightarrow{\textit{BE}}\big)$$

$$\cos \varphi = ----$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$\varphi$$

$$\overrightarrow{BE} = B$$

$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \xrightarrow{\bullet} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

Zadana baza:
$$\mathcal{B} = (A\dot{B}, A\dot{D})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$
 $\overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$

d)
$$\triangleleft ABE = ?$$

$$\varphi = \triangleleft ABE = \triangleleft (\overrightarrow{BA}, \overrightarrow{BE})$$

$$\varphi = \forall ADL = \forall (DA, DL)$$
 $\longrightarrow \longrightarrow$

$$\cos \varphi = \overrightarrow{BA} \cdot \overrightarrow{BE}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$\varphi$$

$$\overrightarrow{BE}$$

$$A$$

$$B$$

$$B$$

$$|AB| = 5$$
, $|AD| = 3$, $\triangleleft DAB = 60^{\circ}$
 $|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$
 $\overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$

d)
$$\triangleleft ABE = ?$$

$$\varphi = \triangleleft ABE = \triangleleft (\overrightarrow{BA}, \overrightarrow{BE})$$

$$\cos \varphi = \frac{\overrightarrow{BA} \cdot \overrightarrow{BE}}{|\overrightarrow{BA}| \cdot |\overrightarrow{BE}|}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana \ baza: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}| = \frac{\sqrt{109}}{5}$$

d)
$$\triangleleft ABE = ?$$

$$\varphi = \triangleleft ABE = \triangleleft (\overrightarrow{BA}, \overrightarrow{BE})$$

$$\cos \varphi = \frac{\overrightarrow{BA} \cdot \overrightarrow{BE}}{|\overrightarrow{BA}| \cdot |\overrightarrow{BE}|} = ----$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$\frac{\overrightarrow{BA} \cdot \overrightarrow{BE}}{|\overrightarrow{BA}| |\overrightarrow{BE}|} = \frac{-1}{|\overrightarrow{BA}|}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ}$$

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$$|\overrightarrow{BE}| = \frac{\sqrt{109}}{5}$$

$$\varphi = \triangleleft ABE = \triangleleft (\overrightarrow{BA}, \overrightarrow{BE})$$

$$\cos \varphi = \frac{\overrightarrow{BA} \cdot \overrightarrow{BE}}{|\overrightarrow{BA}| \cdot |\overrightarrow{BE}|} = \frac{-1}{|\overrightarrow{BA}|}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, \ |AD| = 3, \ \langle DAB = 60^{\circ} \rangle$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana \ baza: \ \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$\varphi = \triangleleft ABE = \triangleleft (\overrightarrow{BA}, \overrightarrow{BE})$$

$$\cos \varphi = \frac{\overrightarrow{BA} \cdot \overrightarrow{BE}}{\left| \overrightarrow{BA} \right| \cdot \left| \overrightarrow{BE} \right|} = \frac{-1}{5 \cdot \frac{\sqrt{109}}{5}}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 0$$

$$|AE| = 0$$

$$\overrightarrow{ABB} = -\frac{1}{5} \overrightarrow{ABB}$$

$$\overrightarrow{BE} = -\frac{1}{5} \overrightarrow{ABB}$$

|AB| = 5, |AD| = 3, $\triangleleft DAB = 60^{\circ}$ $|AE| = \frac{4}{5}|AC| \xrightarrow{\bullet} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$

Zadana baza: $\mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD}$$
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d)
$$\triangleleft ABE = ?$$

$$\varphi = \triangleleft ABE = \triangleleft (\overrightarrow{BA}, \overrightarrow{BE})$$

$$\cos\varphi = \frac{\overrightarrow{BA} \cdot \overrightarrow{BE}}{\left|\overrightarrow{BA}\right| \cdot \left|\overrightarrow{BE}\right|} = \frac{-1}{5 \cdot \frac{\sqrt{109}}{5}} = -\frac{1}{\sqrt{109}}$$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, |AD| = 3, \langle DAB = 60^{\circ} |AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{ABE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}| = \frac{\sqrt{109}}{5}$$

 $\varphi = \triangleleft ABE = \triangleleft (\overrightarrow{BA}, \overrightarrow{BE})$

 $\cos\varphi = \frac{\overrightarrow{BA} \cdot \overrightarrow{BE}}{|\overrightarrow{BA}| \cdot |\overrightarrow{BE}|} = \frac{-1}{5 \cdot \frac{\sqrt{109}}{5}} = -\frac{1}{\sqrt{109}}$

 $\varphi = \arccos\left(-\frac{1}{\sqrt{100}}\right)$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1$$

$$|AB| = 5, |AD| = 3, \langle DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$Zadana \ baza: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}| = \frac{\sqrt{109}}{5}$$

 $\cos\varphi = \frac{\overrightarrow{BA} \cdot \overrightarrow{BE}}{|\overrightarrow{BA}| \cdot |\overrightarrow{BE}|} = \frac{-1}{5 \cdot \frac{\sqrt{109}}{5}} = -\frac{1}{\sqrt{109}}$ $\varphi = \arccos\left(-\frac{1}{\sqrt{109}}\right) - \varphi = 95^{\circ}29'47''$

 $\varphi = \triangleleft ABE = \triangleleft (\overrightarrow{BA}, \overrightarrow{BE})$

$$\overrightarrow{BE} \cdot \overrightarrow{BA} = -1 \qquad |AB| = 5, |AD| = 3, \triangleleft DAB = 60^{\circ}$$

$$|AE| = \frac{4}{5}|AC| \xrightarrow{\text{www}} \overrightarrow{AE} = \frac{4}{5}\overrightarrow{AC}$$

$$\overrightarrow{Zadana baza}: \mathcal{B} = (\overrightarrow{AB}, \overrightarrow{AD})$$

$$\overrightarrow{BE} = -\frac{1}{5}\overrightarrow{AB} + \frac{4}{5}\overrightarrow{AD} \qquad \overrightarrow{AB} \cdot \overrightarrow{AD} = \frac{15}{2}$$

$$|\overrightarrow{BE}| = \frac{\sqrt{109}}{5}$$

$$\varphi = \angle ABE = \angle (\overrightarrow{BA}, \overrightarrow{BE})$$

$$\cos \varphi = \frac{\overrightarrow{BA} \cdot \overrightarrow{BE}}{|\overrightarrow{BA}| \cdot |\overrightarrow{BE}|} = \frac{-1}{5 \cdot \frac{\sqrt{109}}{5}} = -\frac{1}{\sqrt{109}}$$

 $\varphi = \arccos\left(-\frac{1}{\sqrt{109}}\right) - \varphi \qquad \varphi = 95^{\circ}29'47''$