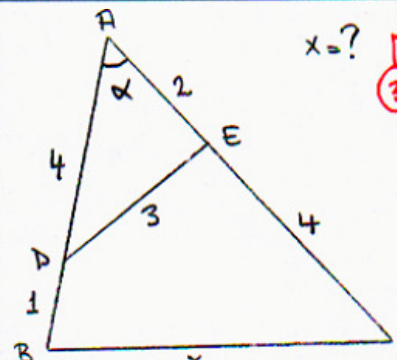
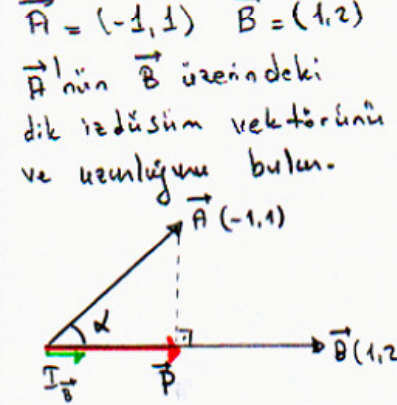


Sınıf	ARNAVUTKÖY KORKMAZ YİĞİT ANADOLU LİSESİ 2010-2011 EĞİTİM VE ÖĞRETİM YILI 10 Sınıf I. Dönem II. Geometri Yazılısı	
Ad Soyad		
No		
1 10 puan		<p>(\vec{ABC}) ile (\vec{DEF})'in ağırlık merkezi G</p> <p>$\vec{AE} + \vec{BF} + \vec{CD} = ?$ \vec{K} olsun.</p> <p>① $\vec{GA} + \vec{AE} = \vec{GE}$ (GAE) $(-\vec{GA} + \vec{GB} + \vec{GC} = \vec{0})$ ①</p> <p>② $\vec{GB} + \vec{BF} = \vec{GF}$ (GBP) $(\vec{GD} + \vec{GE} + \vec{GF} = \vec{0})$ ①</p> <p>③ $\vec{GC} + \vec{CD} = \vec{GD}$ (GCD)</p> <p>$\vec{0} + \vec{K} = \vec{0}$</p> <p>$\vec{GA} + \vec{GB} + \vec{GC} + \vec{K} = \vec{GE} + \vec{GF} + \vec{GD}$ $\vec{K} = \vec{0}$ ②</p>
2 5 + 5 puan	<p>$\vec{A} = (-1, 4) \rightarrow 3\vec{AB} = ?$</p> <p>$\vec{B} = (7, 3)$</p> <p>$= 3 \cdot (\vec{B} - \vec{A})$</p> <p>$= 3 \cdot (7 - (-1), 3 - 4)$</p> <p>$= 3 \cdot (8, -1)$ ③</p> <p>$(24, -3)$ ②</p>	<p>$\vec{GA} + \vec{GB} + \vec{GC} = \vec{0}$ olduğunu gösterin.</p> <p>(G: ağırlık merkezi.)</p> <p>$GCBK$ paralelkenarı oluşturulur.</p> <p>$-\vec{GA} + \vec{GB} + \vec{GC} = \vec{0}$</p> <p>$= \vec{GA} + \vec{GK}$ ①</p> <p>$\vec{GA} = 2\vec{u} \rightarrow \vec{GK} = -\vec{u}$</p> <p>$= 2\vec{u} - 2\vec{u} = \vec{0}$ ①</p>
3 10 puan		<p>$m(\widehat{AEF}) = 75^\circ \rightarrow m(\widehat{FBE}) = \alpha = ?$</p> <p>$\triangle ABE$ eşkenar</p> <p>$m(\widehat{EAF}) = 30^\circ \wedge m(\widehat{AEF}) = 75^\circ$</p> <p>$\rightarrow m(\widehat{AFE}) = 75^\circ$ ②</p> <p>$\rightarrow AB = AF$ ($\triangle ABF$ ikizkenar) ②</p> <p>$m(\widehat{ARF}) = m(\widehat{AFB}) = 45^\circ$ ②</p> <p>$60 - \alpha = 45^\circ \rightarrow \alpha = 15^\circ$ ②</p>
4 10 puan	<p>$\alpha = ?$</p> <p>$\ \vec{OB}\ = 13$ ①</p> <p>$\ \vec{OA}\ = 5$ ①</p> <p>$\vec{B} = (5, 12)$</p> <p>$\vec{C} = (2, 2)$</p> <p>$\vec{A} = (3, 4)$</p>	<p>① $\vec{OB} \cdot \vec{OC} = \ \vec{OB}\ \cdot \ \vec{OC}\ \cdot \cos \alpha = 52 + 24 (*)$</p> <p>② $\vec{OA} \cdot \vec{OC} = \ \vec{OA}\ \cdot \ \vec{OC}\ \cdot \cos \alpha = 32 + 8 (**)$</p> <p>③ $\frac{(*)}{(**)} \rightarrow \frac{13}{5} = \frac{52 + 24}{32 + 8}$ ($\ \vec{OC}\$ ve $\cos \alpha$ sadeleşir)</p> <p>$392 + 104 = 252 + 120$</p> <p>$142 = 16$</p> <p>$\alpha = \frac{1}{7}$ ②</p>
5 5 + 5 puan	<p>$BD = 2 DC$</p> <p>\vec{AD} nüz; \vec{AB} ve \vec{AC} cinsinden yazın.</p> <p>① $(\vec{AD} = \vec{AC} - \vec{u}) \times 2$</p> <p>② $\vec{AD} = \vec{AB} + 2\vec{u}$</p> <p>③ $3\vec{AD} = 2\vec{AC} + \vec{AB}$</p> <p>$\vec{AD} = \frac{\vec{AB} + 2\vec{AC}}{3}$ ①</p>	<p>$OA = 4$</p> <p>$AB = 3$</p> <p>$OABC$ dik dörtgen</p> <p>$\vec{OB} \cdot \vec{AC} = ?$</p> <p>$\vec{AC} = \vec{OB}$</p> <p>$\vec{OB} = (4, 3)$</p> <p>$\vec{OB} = (-4, 3)$ ②</p> <p>$= \vec{OB} \cdot \vec{AC}$</p> <p>$= \vec{OB} \cdot \vec{OB} = (4, 3) \cdot (4, 3)$</p> <p>$= -16 + 9 = -7$ ①</p>

6 5 + 5 puan	<p>$\vec{A} = (5, -12)$ vektörü ile aynı yöndeki birim vektörü bulun.</p> <p>$\ \vec{A}\ = 13$ (1)</p> <p>$\hat{A} = \frac{\vec{A}}{\ \vec{A}\ } = \frac{(5, -12)}{13} = \left(\frac{5}{13}, -\frac{12}{13}\right)$ (2)</p>	<p>$\vec{u} = (2, 10)$ ise \vec{u} ile \vec{v}'leri arasındaki açıyı bulun.</p> <p>$\vec{v} = (-2, 3)$</p> <p>$\vec{u} \cdot \vec{v} = \ \vec{u}\ \cdot \ \vec{v}\ \cdot \cos \alpha$</p> <p>$-2 \cdot 2 + 10 \cdot 3 = \sqrt{104} \cdot \sqrt{13} \cdot \cos \alpha$ (1)</p> <p>$\ \vec{u}\ = \sqrt{104}$ (1)</p> <p>$\ \vec{v}\ = \sqrt{13}$ (1)</p> <p>$\cos \alpha = \frac{26}{\sqrt{13} \cdot \sqrt{8} \cdot \sqrt{13}} = \frac{\sqrt{13} \cdot \sqrt{13} \cdot 2}{\sqrt{13} \cdot 2 \sqrt{2} \cdot \sqrt{13}}$</p> <p>$\cos \alpha = \frac{1}{\sqrt{2}} \rightarrow \alpha = 45^\circ$ (1)</p>
7 5 + 5 puan	<p>$\vec{A} = (-2, 6)$ $\vec{A} \perp \vec{B} \rightarrow k = ?$</p> <p>$\vec{B} = (k, 1)$</p> <p>$\vec{A} \cdot \vec{B} = \ \vec{A}\ \cdot \ \vec{B}\ \cdot \cos 90^\circ = 0$ (1)</p> <p>$-2 \cdot k + 6 \cdot 1 = 0$</p> <p>$-2k = -6$ $k = 3$ (2)</p>	<p>$\vec{A} = \left(-\frac{3}{5}, m\right)$ ($m > 0$) \vec{A} birim vektör ise; \vec{A} ile zıt yönlü ve uzunluğu 10 olan vektörü bulun.</p> <p>$\ \vec{A}\ = 1$</p> <p>$\sqrt{\left(-\frac{3}{5}\right)^2 + m^2} = 1$</p> <p>Zıt yönlü: $-\vec{A} = \left(\frac{3}{5}, -\frac{4}{5}\right)$ (1)</p> <p>$10 \cdot -\vec{A} = \left(\frac{30}{5}, -\frac{40}{5}\right) = (6, -8)$ (2)</p>
8 10 puan	 <p>$x = ?$</p> <p>$\triangle ADE$'de Kosinüs Teo;</p> <p>$3^2 = 4^2 + 2^2 - 2 \cdot 4 \cdot 2 \cdot \cos \alpha$ (1)</p> <p>$9 = 20 - 16 \cos \alpha$</p> <p>$16 \cos \alpha = 11$</p> <p>$\cos \alpha = \frac{11}{16}$ (2)</p>	<p>$\triangle ABC$'de Kosinüs Teo;</p> <p>$x^2 = 5^2 + 6^2 - 2 \cdot 5 \cdot 6 \cdot \frac{11}{16}$</p> <p>$x^2 = 61 - \frac{15 \cdot 11}{4} = \frac{244 - 165}{4} = \frac{79}{4}$</p> <p>$x = \frac{\sqrt{79}}{2}$ (2)</p>
9 10 puan	<p>\mathbb{R}^2'de;</p> <p>$\ \vec{a} + \vec{b}\ = 12$ br</p> <p>$\ \vec{a} - \vec{b}\ = 8$ br</p> <p>$\vec{a} \cdot \vec{b} = ?$</p> <p>$\ \vec{u}\ = \sqrt{\vec{u} \cdot \vec{u}}$</p> <p>$\ \vec{u}\ ^2 = \vec{u} \cdot \vec{u}$ (*)</p> <p>(*) $\ \vec{a} + \vec{b}\ ^2 = (\vec{a} + \vec{b}) \cdot (\vec{a} + \vec{b}) = 12^2$ (2)</p> <p>(*) $\ \vec{a} - \vec{b}\ ^2 = (\vec{a} - \vec{b}) \cdot (\vec{a} - \vec{b}) = 8^2$ (2)</p> <p>$\vec{a}^2 + 2\vec{a} \cdot \vec{b} + \vec{b}^2 = 144$ (2)</p> <p>$+\ (\vec{a}^2 - 2\vec{a} \cdot \vec{b} + \vec{b}^2 = 64) \cdot (-1)$ (2)</p> <p>$4\vec{a} \cdot \vec{b} = 80$</p> <p>$\vec{a} \cdot \vec{b} = 20$ (1)</p>	
10 10 puan	<p>$\vec{A} = (-1, 1)$ $\vec{B} = (1, 2)$</p> <p>\vec{A}'nın \vec{B} üzerindeki dik izdüşüm vektörünü ve uzunluğunu bulun.</p>  <p>$\vec{P} = \vec{A}$'nın \vec{B} üzerindeki dik izdüşüm vektörü</p> <p>$\vec{I}_B = \frac{\vec{B}}{\ \vec{B}\ } = \frac{(1, 2)}{\sqrt{5}} = \left(\frac{1}{\sqrt{5}}, \frac{2}{\sqrt{5}}\right)$ (2)</p> <p>$\vec{A} \cdot \vec{B} = \ \vec{A}\ \cdot \ \vec{B}\ \cdot \cos \alpha$</p> <p>$\vec{P} = \ \vec{A}\ \cdot \cos \alpha \cdot \vec{I}_B$</p> <p>$= \frac{\vec{A} \cdot \vec{B}}{\ \vec{B}\ } \cdot \vec{I}_B = \frac{-1 \cdot 1 + 1 \cdot 2}{\sqrt{5}} \cdot \left(\frac{1}{\sqrt{5}}, \frac{2}{\sqrt{5}}\right)$</p> <p>$= \frac{1}{\sqrt{5}} \left(\frac{1}{\sqrt{5}}, \frac{2}{\sqrt{5}}\right) = \left(\frac{1}{5}, \frac{2}{5}\right)$ (2)</p>	<p>$\ \vec{A}\ = \sqrt{2}$ (1)</p> <p>$\ \vec{B}\ = \sqrt{5}$ (1)</p> <p>$\ \vec{P}\ = \sqrt{\frac{1}{25} + \frac{4}{25}} = \sqrt{\frac{5}{25}} = \frac{1}{\sqrt{5}}$</p> <p>$\ \vec{P}\ = \frac{1}{\sqrt{5}}$ (2)</p>