1. $\overrightarrow{AB} = (m-2,-2)$

$\overrightarrow{BC} = (-1-m,3)$

$\dfrac{m-2}{-1-m} = \dfrac{-2}{3} \Rightarrow 3m-6 = 2+2m$

$\Rightarrow m = 8$

Doğru cevap **d** dir.

2. $\dfrac{m}{3-m} = \dfrac{1}{m+1} \Rightarrow m^2+m = 3-m$

$\Rightarrow m^2+2m-3 = 0$

$\Rightarrow (m+3)(m-1) = 0$

$\Rightarrow m_1 = -3, \quad m_2 = 1$

Zıt yönlü ise $m = -3$ olmalı.

$\vec{v} = \overrightarrow{v_1} + \overrightarrow{v_2} = (-3,1)+(6,-2) = (3,-1)$

Doğru cevap **b** dir.

3. $x(1,-2) + y(-1,1) = (5,-8)$

$$\left.\begin{array}{r} x-y = 5 \\ -2x+y = -8 \end{array}\right\}$$

$\Rightarrow x = 3, \; y = -2$

$\Rightarrow \vec{c} = 3\vec{a} - 2\vec{b}$

Doğru cevap **e** dir.

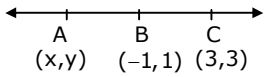
4. $\overrightarrow{AB} - \overrightarrow{CB} = \overrightarrow{AB} + \overrightarrow{BC} = \overrightarrow{AC}$

$\Rightarrow \overrightarrow{AC} = \vec{C} - \vec{A} = (1,2)-(-1,1)$

$\Rightarrow \overrightarrow{AC} = (2,1)$

Doğru cevap **d** dir.

5.



$\dfrac{|AB|}{|AC|} = \dfrac{2}{3} \Rightarrow 3\overrightarrow{AB} = 2\overrightarrow{AC}$

$\Rightarrow 3(-1-x,1-y) = 2(3-x,3-y)$

$$\left.\begin{array}{l} \Rightarrow -3-3x = 6-2x \\ \quad\; 3-3y = 6-2y \end{array}\right\}$$

$\Rightarrow x = -9, \quad y = -3$

$\Rightarrow x+y = -12$

Doğru cevap **d** dir.

6. $\overrightarrow{AD} = \overrightarrow{AB} + \overrightarrow{BD} = (1,2)$

$\overrightarrow{BC} = \overrightarrow{BA} + \overrightarrow{AC} = (-2,3)+(3,1) = (1,4)$

$\overrightarrow{AD} \cdot \overrightarrow{BC} = (1,2)\cdot(1,4) = 9$

Doğru cevap **e** dir.

7. $CB \perp BA$

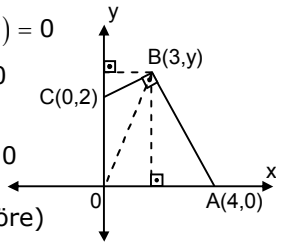
$\Rightarrow (3,y-2)\cdot(-1,y) = 0$

$\Rightarrow -3+y^2-2y = 0$

$\Rightarrow y^2-2y-3 = 0$

$\Rightarrow (y-3)(y+1) = 0$

$\Rightarrow y = 3$ (şekle göre)



$A(OABC) = A\left(O\overset{\Delta}{A}B\right) + A\left(O\overset{\Delta}{B}C\right)$

$\Rightarrow A(OABC) = \dfrac{4\cdot 3}{2} + \dfrac{2\cdot 3}{2}$

$\Rightarrow A(OABC) = 9 \text{ birim}^2$

Doğru cevap **a** dır.

8. $x(2,1) + y(1,3) = (8,9)$

$$\begin{array}{rl} -3\,/ & 2x+y = 8 \\ & \underline{x+3y = 9} \end{array} \qquad \begin{array}{l} x = 1 \\ y = 6 \end{array}$$

$\overrightarrow{v_a} = (2,1)$

$\overrightarrow{v_b} = (6,18)$

$\overrightarrow{v_a} \cdot \overrightarrow{v_b} = 12+18 = 30$

Doğru cevap **a** dır.

9. $\overrightarrow{BD}\cdot\overrightarrow{DC}=\left(\overrightarrow{BA}+\overrightarrow{AD}\right)\cdot\overrightarrow{DC}$

$\overrightarrow{BD}\cdot\overrightarrow{DC}=\overrightarrow{BA}\cdot\overrightarrow{DC}+\overrightarrow{AD}\cdot\overrightarrow{DC}$

$\overrightarrow{BD}\cdot\overrightarrow{DC}=0+2\cdot 3$

$\overrightarrow{BD}\cdot\overrightarrow{DC}=6$

Doğru cevap **c** dir.

10. $\overrightarrow{AH}\cdot\left(\overrightarrow{AB}+\overrightarrow{AC}\right)$

$=\overrightarrow{AH}\cdot\left(\overrightarrow{AH}+\overrightarrow{HB}+\overrightarrow{AH}+\overrightarrow{HC}\right)$

$=\overrightarrow{AH}\cdot\left(2\overrightarrow{AH}+\overrightarrow{HB}+\overrightarrow{HC}\right)$

$=2\left\|AH\right\|^2+\left\|\overrightarrow{AH}\right\|\cdot\overrightarrow{HB}+\overrightarrow{AH}\cdot\overrightarrow{HC}$

$=2\cdot 9$

$=18$

Doğru cevap **e** dir.

11. $\overrightarrow{BA}\cdot\overrightarrow{DE}=\overrightarrow{BA}\cdot\left(\overrightarrow{DA}+\overrightarrow{AE}\right)$

$\overrightarrow{BA}\cdot\overrightarrow{DE}=\overrightarrow{BA}\cdot\overrightarrow{DA}+\overrightarrow{BA}\cdot\overrightarrow{AE}$

$\overrightarrow{BA}\cdot\overrightarrow{DE}=6\cdot 4+6\cdot 3\cdot\frac{-1}{2}$

$\overrightarrow{BA}\cdot\overrightarrow{DE}=15$

Doğru cevap **b** dir.

12. $\left|\vec{a}\cdot\frac{\vec{b}}{\left\|\vec{b}\right\|}\right|=3$

$\vec{b}=\left(-4\sqrt{2},2\right)\Rightarrow\left\|\vec{b}\right\|=6$

$\left|\frac{\vec{a}\cdot\vec{b}}{6}\right|=3\Rightarrow\vec{a}\cdot\vec{b}=\mp 18$

Doğru cevap **b** dir.

13.

Doğru cevap **d** dir.

14. $\overrightarrow{AB}\cdot\overrightarrow{CD}=\overrightarrow{DC}\cdot\overrightarrow{BC}$

$\Rightarrow\overrightarrow{AB}\cdot\overrightarrow{CD}+\overrightarrow{CD}\cdot\overrightarrow{BC}=0$

$\Rightarrow\overrightarrow{CD}\cdot\left(\overrightarrow{AB}+\overrightarrow{BC}\right)=0$

$\Rightarrow\overrightarrow{CD}\cdot\overrightarrow{AC}=0$

$\Rightarrow\overrightarrow{CD}\perp\overrightarrow{AC}$

Doğru cevap **a** dır.

15. $\left\|\vec{A}\right\|=\sqrt{\vec{A}\cdot\vec{A}}$

$\left\|\vec{A}\right\|=\sqrt{\left(6\vec{a}+3\vec{b}\right)^2}$

$\left\|\vec{A}\right\|=\sqrt{36+9+36\cdot\frac{-1}{2}}$

$\left\|\vec{A}\right\|=3\sqrt{3}$

Doğru cevap **b** dir.

16. $\vec{c}=\vec{b}-\vec{a}$

$\Rightarrow\vec{a}=\vec{b}-\vec{c}$

$\vec{a}\cdot\left(\vec{b}+\vec{c}\right)=0$

$\Rightarrow\left(\vec{b}-\vec{c}\right)\left(\vec{b}+\vec{c}\right)=0$

$\Rightarrow\left\|\vec{b}\right\|=\left\|\vec{c}\right\|$

Doğru cevap **c** dir.

17. 1. yol

$\vec{A}\cdot\vec{B}=0$

$\left(\vec{A}+\vec{B}\right)\cdot\vec{B}=\vec{A}\cdot\vec{B}+\vec{B}\cdot\vec{B}$

$\Rightarrow\left(\vec{A}+\vec{B}\right)\cdot\vec{B}=\left\|\vec{B}\right\|^2$ (1)

$\left(\vec{A}+\vec{B}\right)\cdot\left(\vec{A}+\vec{B}\right)=\left\|\vec{A}\right\|^2+\left\|\vec{B}\right\|^2+2\cdot\vec{A}\cdot\vec{B}$

$\Rightarrow\left\|\vec{A}+\vec{B}\right\|^2=\|A\|^2+\left\|\vec{B}\right\|^2$

$\Rightarrow 81=49+\left\|\vec{B}\right\|^2\Rightarrow\left\|\vec{B}\right\|^2=32$ (2)

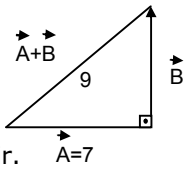
(1) ve (2) den $\left(\vec{A}+\vec{B}\right)\cdot\vec{B}=32$

2. yol

$\left(\vec{A}+\vec{B}\right)^2\cdot\vec{B}$

$=\vec{A}\cdot\vec{B}+\left\|\vec{B}\right\|^2$

$=81-49$



Doğru cevap **c** dir.

18.

Doğru cevap **a** dır.

19.

$$\left.\begin{array}{r}\overrightarrow{BA}+\frac{1}{3}\overrightarrow{AC}=\overrightarrow{BF}=(7,3)\\ -\frac{1}{2}\overrightarrow{BA}+\frac{2}{3}\left(\overrightarrow{BA}+\overrightarrow{AC}\right)=\overrightarrow{DE}=(3,-5)\end{array}\right\}$$

$$\Rightarrow\left.\begin{array}{r}\overrightarrow{BA}+\frac{1}{3}\overrightarrow{AC}=(7,3)\\ -6\,/\ \ \frac{1}{6}+\overrightarrow{BA}+\frac{2}{3}\overrightarrow{AC}=(3,-5)\end{array}\right\}$$

$$\left(\frac{1}{3}-4\right)\overrightarrow{AC}=(-11,33)$$

$$\Rightarrow\overrightarrow{AC}=(3,-9)$$

Doğru cevap **c** dir.

20.

Doğru cevap **e** dir.