

۱۹,۵

کلاس یازدهم: A

یا شماره تکلیف شماره: ۱۷

$A(-3, k)$ $y = -\frac{1}{2}x + b$ $AB = \sqrt{(4-(-3))^2 + (b-(-b-1))^2} = \sqrt{49+9} = \sqrt{58}$
 $B(4, m)$ $k = -\frac{1}{2} \times 4 + b = 1 + b$ $m = -\frac{1}{2} \times 4 + b = b - 2$ $S = (\sqrt{58})^2 = 58$

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$A(-1, 5)$ $B(5, 1)$

$AB = \sqrt{(5-(-1))^2 + (1-5)^2} = \sqrt{16+9} = 5 = \textcircled{5} = CD$

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$D(-1, 9)$ $C(5, 9)$
 $(-1, 9)$ $(5, 9)$

$CD = \sqrt{(5-(-1))^2 + (9-9)^2} = \sqrt{16+0} = 4$

$m_{AB} = \frac{1-5}{5-(-1)} = -\frac{4}{6} = -\frac{2}{3}$

$m_{BC} = \frac{9-1}{5-5} = \frac{8}{0}$

$y = -\frac{2}{3}x + b = -\frac{2}{3}x - 2$

$1 = -\frac{2}{3} \times 4 + b \Rightarrow b = 2$

$y = -\frac{2}{3}x - 2$

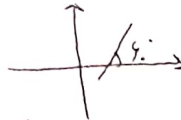
$\Delta = 16 + 2 \times 4 = 24$

$x = \frac{-(-2) \pm \sqrt{24}}{2} = \frac{2 \pm 2\sqrt{6}}{2} = 1 \pm \sqrt{6}$

$P = 2(1 + \sqrt{6}) = 2 + 2\sqrt{6}$

$BC = \sqrt{(5-(-1))^2 + (9-9)^2} = \sqrt{16+0} = 4$

$(m-1)y = -2mx + 3$



$m = \frac{-2m}{m-1} = \tan \alpha = \tan 45^\circ = 1 \Rightarrow \sqrt{2}m^2 - \sqrt{2} = -2m \Rightarrow \sqrt{2}m^2 + 2m - \sqrt{2} = 0$

$\frac{1}{\sqrt{2}} - \frac{2}{\sqrt{2}} = \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{1-\sqrt{2}}{\sqrt{2}}$

$\Delta = 4 + 4 = 8$

$m = \frac{-2 \pm \sqrt{8}}{2\sqrt{2}} = \frac{-2 \pm 2\sqrt{2}}{2\sqrt{2}} = \frac{-1 \pm \sqrt{2}}{\sqrt{2}}$

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$A(1, 9)$ $B(5, 2)$ $C(7, 11)$

$AH = \frac{|ax+by+c|}{\sqrt{a^2+b^2}} = \frac{|1 \times 1 + 1 \times 9 + 1 \times 1|}{\sqrt{1+1}} = \frac{11}{\sqrt{2}} = \frac{11\sqrt{2}}{2}$

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$m_{BC} = \frac{11-2}{7-5} = \frac{9}{2} = 4.5 \Rightarrow y = 4.5x + b \Rightarrow y = 4.5x - 3$

$A(1, 9)$ $B(5, 2)$ $C(7, 11)$

$AB: y = -2x + 11$

$AC: y = 2x + 7$

$BC: y = 2x - 9$

$B = \begin{cases} BC: y = 2x - 9 \\ AB: y = -2x + 11 \end{cases}$

$2x - 9 = -2x + 11$

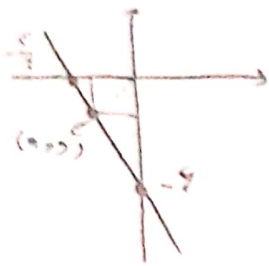
$4x = 20 \Rightarrow x = 5$

$x = 5$

$y = 1$

$BH = \frac{|4x - 2y - 11|}{\sqrt{16+4}} = \frac{4 \times 5 - 2 \times 1 - 11}{\sqrt{20}} = \frac{9}{\sqrt{20}} = \frac{9\sqrt{5}}{10}$

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$$\frac{y}{-4} + \frac{x}{-2} = 1$$

$$y = x$$

$$\Rightarrow x = -\lambda x - 5$$

$$9x = -5$$

$$x = -\frac{5}{9} = -\frac{2}{9}$$

$$\left(\frac{y}{-4} + \frac{x}{-2} = 1\right) \times 4 =$$

$$y + 2x = -4 \quad y = -2x - 4$$

$$\sqrt{2} \times \frac{2}{\sqrt{2}} = \frac{2\sqrt{2}}{\sqrt{2}} \quad \checkmark$$

$$\frac{2\sqrt{2}}{\sqrt{2}} \quad -4 \quad (2)$$

① $ay - x = a - 1$ $m_1 = m_2 \Rightarrow \frac{1}{a} = \frac{a}{1} \Rightarrow a = 1$

$ay = x + a - 1 = y = x$

② $y - ax = 1 \Rightarrow y = ax + 1 = y = x + 1$

$$h = \frac{|1 - 0|}{\sqrt{1+1}} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$\left(\frac{\sqrt{2}}{2}\right)^2 + c^2 = d^2$$

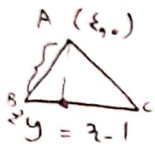
$$\frac{1}{2} + c^2 = d^2$$

$$c^2 = d^2 - \frac{1}{2}$$

$$c^2 = \frac{29}{2} \Rightarrow c = \frac{\sqrt{58}}{\sqrt{2}} = \frac{\sqrt{29}}{1}$$

$$S = \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} = \frac{2 \times \sqrt{2}}{4} = \frac{\sqrt{2}}{2} \quad \checkmark$$

$$(2) -4$$

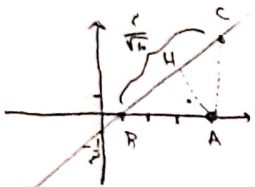


$$BC = AB = \frac{|x - y + 1|}{\sqrt{2}} = \frac{2}{\sqrt{2}} \quad \checkmark$$

مگر نه می تواند برابر $\frac{2}{\sqrt{2}}$ باشد

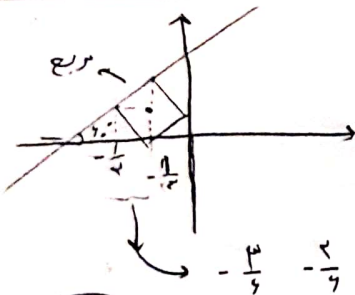
$$S_{ABC} = \left(\frac{2}{\sqrt{2}} \times \frac{2}{\sqrt{2}}\right) \times \frac{1}{2} = \frac{2}{2} = 1$$

$$(5) -1$$



$$\tan \alpha = \sqrt{3} \Rightarrow \alpha = 60^\circ$$

$$2 \times \frac{1}{4} = \frac{1}{2} \quad \checkmark$$



$$-\frac{1}{4} - \frac{2}{4} \xrightarrow{\text{حاصل}} = \frac{1}{4}$$

$$0 - 9$$

$y = \frac{5}{2}x + \frac{20}{2}$ $m_{CD} = m_{OD} = \frac{0-5}{0-2} = \frac{5}{2}$ $y = \frac{5}{2}x + \frac{20}{2} \Rightarrow y = \frac{5}{2}x$

$m_{OD} = -\frac{5}{2}$ $y = -\frac{5}{2}x + b$

$-5 = -\frac{5}{2} \times 2 + b \Rightarrow -5 = -5 + b \Rightarrow b = 0$ $y = -\frac{5}{2}x$

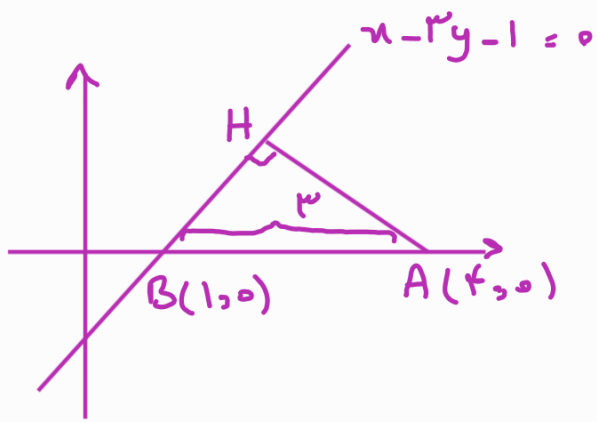
$\frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{|0 - c'|}{\sqrt{\frac{25}{4} + 1}} = 0 \Rightarrow \frac{c'}{\sqrt{\frac{29}{4}}} = 0$

$(-\frac{5}{2}x - \frac{20}{2} = \frac{5}{2}x + \frac{20}{2}) \times 1 \Rightarrow -9x - 20 = 5x + 20 \Rightarrow -14x = 40 \Rightarrow x = -\frac{20}{7}$

$y = -\frac{5}{2} \times (-\frac{20}{7}) = \frac{50}{7}$

$\frac{y}{\frac{50}{7}} = \frac{x}{-\frac{20}{7}} = \frac{1}{k} \Rightarrow \frac{7}{50} = \frac{7}{-20k} \Rightarrow k = -\frac{5}{2}$

$$(2) -10$$



$$|AH| = \frac{|4 - 0 - 1|}{\sqrt{1+1}} = \frac{3}{\sqrt{2}}$$

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$$\frac{9}{10} (\cancel{AH})^2 + (BH)^2 = (\cancel{AB})^2 \rightarrow BH = \frac{9}{\sqrt{10}}$$

$$S_D = \frac{9}{\sqrt{10}} \times \frac{3}{\sqrt{2}} \times \frac{1}{2} = \frac{27}{20} = 1,35$$

$$m_D = \frac{b-a}{\frac{1}{4}} = \sqrt{2} \rightarrow b-a = \frac{\sqrt{2}}{4}$$

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$$\text{ضلع مربع} = \sqrt{\frac{1}{16} + (b-a)^2} = \frac{1}{4}$$

$$\text{مقدار مربع} = \sqrt{2} \times \text{ضلع} = \frac{\sqrt{2}}{4}$$