

۱۴،۵

باردهم سپر A

تکلیف شماره ۱۷

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$$m = \frac{m-k}{-1} = -1 \Rightarrow 2m - 2k = -4 \Rightarrow m - k = -2$$

تکلیف شده است به علی ملاحظه است که صورت تکرار به خط دوم و خط سوم داده شده!

$$AB = \sqrt{(m-k)^2 + 4^2} = \sqrt{9 + 16} = 5 \Rightarrow S_2(3, 5) = (3, 5)$$

$$AB = \sqrt{3^2 + 4^2} = 5 = CD \Rightarrow$$

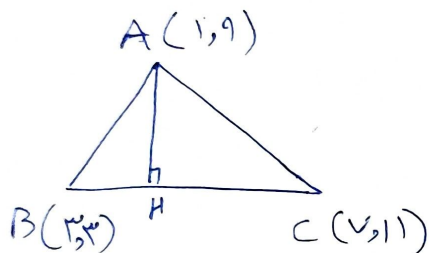
$$\sqrt{(2x+1)^2 + (-3)^2} = \sqrt{10} \Rightarrow 4x^2 + 4x + 10 = 10 \Rightarrow 4x^2 + 4x = 0 \Rightarrow x_1 = 0, x_2 = -1$$

$$\sqrt{(x-3)^2 + (y-1)^2} = \sqrt{x^2 + (y-1)^2} \Rightarrow x = \frac{3}{2}$$

اذا به سوال؟
صفحه آخر نوشته

$$m = \tan 45^\circ = \sqrt{3} \Rightarrow \frac{-2m}{m^2 - 1} = \sqrt{3} \Rightarrow \sqrt{3}m^2 + 2m - \sqrt{3} = 0$$

$$\Rightarrow m^2 + 2m - 3 = 0 \Rightarrow m = \frac{-2 \pm \sqrt{4 + 12}}{2} = \frac{-2 \pm 4}{2} \Rightarrow m = 1 \text{ or } m = -3$$



$$BC: m = \frac{11-5}{5-3} = 3 \Rightarrow m_{AH} = -\frac{1}{3}$$

$$\Rightarrow y_2 = 2x + b \Rightarrow 2 = 4 + b \Rightarrow y = 2x - 3$$

$$y_{AH} = -\frac{x}{3} + b \Rightarrow 9 = -\frac{1}{3} + b \Rightarrow y = -\frac{x}{3} + \frac{19}{3}$$

$$2x - 3 = -\frac{x}{3} + \frac{19}{3} \Rightarrow x = \frac{28}{7} = 4, y = \frac{5}{7} \rightarrow AH = 2\sqrt{5}$$

$$\Rightarrow AH = \sqrt{\left(\frac{28}{7}\right)^2 + \left(\frac{5}{7}\right)^2} = \sqrt{\frac{784}{49} + \frac{25}{49}} = \sqrt{\frac{809}{49}} = \frac{\sqrt{809}}{7}$$

$$BH: AC \text{ فاصله} = \frac{|1 \cdot 9 - 1 \cdot 5|}{\sqrt{1^2 + 1^2}} = \frac{4}{\sqrt{2}} = 2\sqrt{2}$$

$$A: \frac{5x+14}{4} = 5 - 2x \Rightarrow 18 - 8x = 5x + 14 \Rightarrow 11x = 4 \Rightarrow x = \frac{4}{11}, y = 0 \Rightarrow A(1,0)$$

$$B: 5 - 2x = \frac{5x-19}{4} \Rightarrow 14 - 8x = 5x - 19 \Rightarrow 11x = 33 \Rightarrow x = 3, y = 1$$

$$C: \frac{5x-19}{4} = \frac{5x+14}{4} \Rightarrow 14 - 8x = 5x + 14 \Rightarrow 11x = 0 \Rightarrow x = 0, y = 1$$

$$y_{AC} = \frac{5}{4}x + b \Rightarrow 0 = \frac{5}{4} \cdot 0 + b \Rightarrow y = \frac{5}{4}x + \frac{14}{4}$$

$$y_{BH} = -\frac{5}{4}x + b \Rightarrow 1 = -\frac{5}{4} \cdot 0 + b \Rightarrow y = -\frac{5}{4}x + 1$$

$$\frac{5}{4}x + \frac{14}{4} = -\frac{5}{4}x + 1 \Rightarrow x = \frac{3}{5}, y = \frac{11}{5}$$

$$\Rightarrow BH = \sqrt{\left(3 - \frac{3}{5}\right)^2 + \left(1 - \frac{11}{5}\right)^2} = \sqrt{\frac{144}{25} + \frac{64}{25}} = \sqrt{\frac{208}{25}} = \frac{\sqrt{208}}{5}$$

$$y = ax + b \rightarrow -1x - 4 \Rightarrow y = -1x - 4$$

(1, 17.5) -9

$$x = y \Rightarrow x = -1x - 4 \Rightarrow 2x = -4 \Rightarrow x = -2 \rightarrow \text{طول مربع} = \frac{2}{3}$$

$$\Rightarrow \text{قطر مربع} = \boxed{\frac{2}{3}\sqrt{2}}$$

قطره عتیقونه
مقرر باشه!

~~maximize~~ $y - ax = 1$ A

~~minimize~~ $ay - x = a - 1$ B



(1, 5)

$$m_{AD} = m_{BC} \Rightarrow \frac{a}{1} = \frac{1}{a} \Rightarrow a^2 = 1 \Rightarrow a = \pm 1$$

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

$$y = \frac{x}{a} + \frac{a-1}{a} \Rightarrow y = x$$

$$DC = \frac{\sqrt{2}}{2}$$

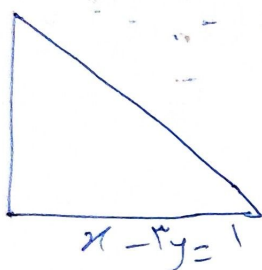
قطره!

$$S = 5 \times \frac{\sqrt{2}}{2} \times 2 =$$

$$(فیه غصه) AD = \frac{V}{\sqrt{2}} \rightarrow S = \frac{V}{2}$$

$$\boxed{5\sqrt{2}}$$

A(5, 0)



$$AC \text{ دایره} = \frac{|x - 3y - 1|}{\sqrt{1+9}} = \frac{3}{\sqrt{10}}$$

(2, 5)

$$m = \frac{b-a}{\frac{1}{9}} = \sqrt{2} \Rightarrow b-a = \frac{\sqrt{2}}{9}$$

(2)

$$r = \sqrt{\left(\frac{1}{9}\right)^2 + \left(\frac{\sqrt{2}}{9}\right)^2} \times \sqrt{2} = \sqrt{\frac{1}{9}} \times \sqrt{2} = \boxed{\frac{\sqrt{2}}{3}}$$

$$r \text{ شیب} = \frac{-\frac{4}{-2}}{\frac{4}{3}} = \frac{2}{3} \rightarrow m_L = -\frac{3}{2} \rightarrow y = -\frac{3}{2}x + b \rightarrow -\frac{4}{2} = \frac{4}{2} + b$$

(2) -10

$$\Rightarrow y = -\frac{3}{2}x - \frac{12}{2}$$

$$m_{L'} = \frac{4}{3} \rightarrow y = \frac{4}{3}x + b \Rightarrow y = \frac{4}{3}x + \frac{10}{3}$$

$$\frac{|b|}{\sqrt{11 - \frac{17}{9}}} = 0 \rightarrow b = \frac{10}{3}$$

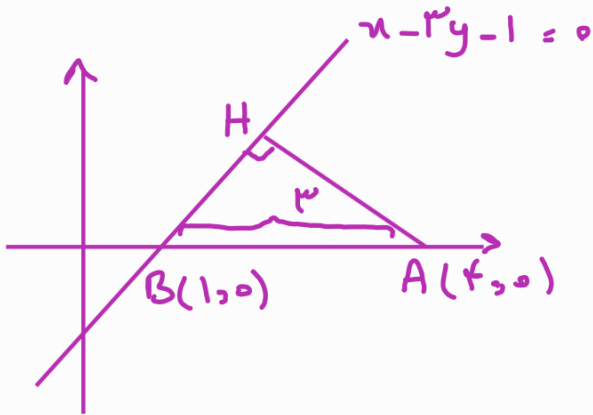
$$\frac{4}{3}x + \frac{10}{3} = -\frac{3}{2}x - \frac{12}{2} \Rightarrow x = -\frac{5}{2} \Rightarrow -\frac{5}{2} - 1 = \boxed{V}$$

$$m_{AB} \times m_{BC} = -1 \rightarrow -\frac{r}{r} \times \frac{y-1}{-\frac{r}{r}} = -1 \rightarrow y = -1 \quad (r)$$

$$|AB| = \sqrt{14+9} = 5$$

$$|BC| = \sqrt{\frac{9}{r} + r} = \frac{5}{r}$$

$$\rightarrow p = 15$$



$$|AH| = \frac{|4-0-1|}{\sqrt{9+1}} = \frac{r}{\sqrt{10}}$$

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

$$S_{\Delta} = \frac{9}{\sqrt{10}} \times \frac{r}{\sqrt{10}} \times \frac{1}{r} = \frac{r}{r_0} = 1,35$$