

$$m = \frac{-2-2}{2-2} = \frac{-4}{0} = \infty$$

مستقیم عمودی

$$\begin{vmatrix} 1 & 2 \\ -2 & 2 \end{vmatrix} = 10$$

$$y = ax + b \rightarrow 2 = -2x + b \rightarrow 2 = -4 + b \rightarrow b = 6$$

$$y = -2x + 6$$

$$2y = -4x + 6 \rightarrow y = -2x + 3$$

$$2 = -2(2) + b \rightarrow y = -2x + 6$$

$$2y + 4x = 6$$

$$x + 3y = 1 \rightarrow 3y = -x + 1 \rightarrow y = -\frac{1}{3}x + \frac{1}{3} \rightarrow m = -\frac{1}{3} \rightarrow y = \frac{1}{3}x + b$$

$$2 = 1(2) + b \rightarrow y = x - 1$$

$$x + 3y = 1$$

$$y = \frac{1}{3}x + b \rightarrow \frac{1}{3}x + b = 2 \rightarrow b = 2 - \frac{1}{3}x \quad \frac{x}{3} = \sqrt{2}$$

$$y = \frac{1}{3}x - \frac{1}{3}x + 2$$

$$\begin{vmatrix} 1 & 2 \\ -1 & 2 \end{vmatrix} = 4$$

$$\sqrt{(1-2)^2 + (-1-2)^2} = \sqrt{1+9} = \sqrt{10}$$

فاصله از نقطه 1

$$\frac{|1(2) + 2(-1) - 2|}{\sqrt{1+4}} = \frac{|2-2-2|}{\sqrt{5}} = \frac{2}{\sqrt{5}}$$

$$2x + 5y = 2$$

$$2x + 5y = 1, \quad 2x + 5y = 2$$

فاصله خط از خط 2 موازی این خط

$$\begin{cases} 2x + 5y = 1 \\ 2x + 5y = 2 \end{cases} \rightarrow 2x + 5y = 1.5$$

$$d = \frac{|c-c'|}{\sqrt{a^2+b^2}} \rightarrow \frac{|1-2|}{\sqrt{2^2+5^2}} = \frac{1}{\sqrt{29}} = \frac{1}{\sqrt{29}}$$

فاصله از خط 2

$$\frac{|2x+5y-1|}{\sqrt{29}} = \frac{|2x+5y-2|}{\sqrt{29}} \rightarrow |2x+5y-1| = |2x+5y-2|$$

$$2x+5y-1 = 2x+5y-2 \rightarrow x-y = -1$$

$$2x+5y-1 = -(2x+5y-2) \rightarrow 4x+10y = 3$$

صیغه عمومی

$$y = -2m + 3 \rightarrow m = -\frac{y-3}{2}$$

$$y = 2m + 4 \rightarrow m' = \frac{y-4}{2}$$

$$\tan \alpha = \left| \frac{m-m'}{1+mm'} \right| \rightarrow \left| \frac{-\frac{y-3}{2} - \frac{y-4}{2}}{1 + (-\frac{y-3}{2})(\frac{y-4}{2})} \right| = \left| \frac{-y+7}{-y^2+7y-10} \right| = 1 \rightarrow \alpha = \frac{\pi}{4}$$

$$B \mid \frac{-5}{4} \quad A \mid \frac{3}{-2}$$

$$\sqrt{\left(\frac{3-(-5)}{4}\right)^2 + \left(\frac{-2-3}{-4}\right)^2} = \sqrt{100} = 10$$

فاصله این دو نقطه

$$\left(\frac{-5+3}{2}, \frac{4-2}{2} \right) = (-1, 1)$$

مختصات نقطه وسط این دو نقطه

$$\left(\frac{-10-2+3}{2}, \frac{-13+2+1}{2} \right) = (-3, -3)$$

$$\begin{vmatrix} -10 & -2 & 3 \\ -13 & 2 & 1 \end{vmatrix}$$

مختصات؟

$$\frac{1}{2} \begin{vmatrix} 3 & 1 & 1 \\ -2 & 2 & 1 \\ -10 & -13 & 1 \end{vmatrix} = \frac{1}{2} (9 + 29 - 10 + 13 + 2 + 39) = 61$$

مساحت مثلث؟

$$y = \frac{2m+1}{4m-3}$$

$$-y = \frac{2m+1}{4m-3}$$

تقریب نسبت به m

$$y = \frac{-2m+1}{-4m-3}$$

تقریب نسبت به m

$$m = \frac{4y+1}{4y-3}$$

نسبت از اول دوم

$$-m = \frac{-4y+1}{-4y-3}$$

نسبت از دوم و اول

$$m' = m - \alpha \quad \alpha = 2 \quad \beta = -3$$

$$y' = y - \beta$$

$$x = m' + 2 \rightarrow x = m + 2$$

$$y' = y - 2 \rightarrow y = y' + 2$$

$$m' = m - 2 \rightarrow y' = y + 2$$

$$y' - 2 = 2(m' + 2) + 1$$

$$y' + 2 = 2(m' + 2) = \frac{2m' + 4}{m' + 2} - 2 = y'$$

$$y' = \frac{2m' + 4}{m' + 2} - 2$$

$$y = \frac{2m+1}{4m-3}$$

$$y = \frac{2m+1}{4m-3}$$

$$y = \frac{2m'+4}{m'+2} - 2$$

$$y = \frac{2m'+4}{m'+2} - 2$$

$$\begin{cases} 3m + 4y = 2 \\ 3(m - \Delta y = 1) \end{cases}$$

روش حذف

$$\begin{array}{r} 3m + 4y = 2 \\ - 3m + 12y = -3 \\ \hline 16y = -1 \\ y = -\frac{1}{16} \end{array}$$

$$m - \Delta \left(-\frac{1}{16} \right) = 1$$

$$m + \frac{\Delta}{16} = 1 \rightarrow m = \frac{16}{16} - \frac{\Delta}{16} = \frac{15}{16}$$

روش مذکور

$$m = \frac{\begin{vmatrix} b & c \\ b' & c' \end{vmatrix}}{\begin{vmatrix} a & b \\ a' & b' \end{vmatrix}}, \quad y = \frac{\begin{vmatrix} a & c \\ a' & c' \end{vmatrix}}{\begin{vmatrix} a & b \\ a' & b' \end{vmatrix}}$$

$$- \frac{\begin{vmatrix} 4 & 2 \\ -16 & 1 \end{vmatrix}}{\begin{vmatrix} 3 & 4 \\ 1 & -16 \end{vmatrix}} \quad , \quad \frac{\begin{vmatrix} 3 & 2 \\ 1 & 1 \end{vmatrix}}{\begin{vmatrix} 3 & 4 \\ 1 & -16 \end{vmatrix}}$$

$$- \frac{\cancel{16} + \cancel{12} + 10}{\cancel{1-16-4} - 16} \quad , \quad \frac{\cancel{3-2}}{\cancel{1-16-4} - 16} \rightarrow \left(+\frac{16}{16}, -\frac{1}{16} \right)$$