

$$T = (3, 1) \quad M_{AB} = \frac{1 \cdot 6}{2-1} = -V \Rightarrow m' = \frac{1}{V}$$

$$\Rightarrow y = \frac{1}{V} x + b \xrightarrow{1} y = \frac{1}{V} x + \frac{6}{V}$$

$$BC = \sqrt{9+16} = 5$$

$$M_{BC} = \frac{V-3}{-1-1} = \frac{-V}{-2} = \frac{V}{2} \Rightarrow y = \frac{V}{2} x + b \xrightarrow{1} y = \frac{V}{2} x + \frac{5}{2}$$

$$d = \frac{|1+6 \cdot \frac{1}{V}|}{\sqrt{1+\frac{1}{V^2}}} = \frac{\frac{1}{V}}{\frac{1}{V}} = 1 \Rightarrow 3-1 = 2$$

$$\left. \begin{aligned} y &= \frac{1}{V} x + \frac{6}{V} \\ y &= \frac{V}{2} x + \frac{5}{2} \end{aligned} \right\} m = m' \Rightarrow \frac{1}{V} = \frac{V}{2} \Rightarrow a = 2$$

$$d = \frac{|c-c'|}{\sqrt{a^2+b^2}} \Rightarrow 2r = \frac{|\frac{1}{2} - \frac{1}{2}|}{\sqrt{1+\frac{1}{4}}} = \frac{r}{\sqrt{\frac{5}{4}}} = \frac{r}{\sqrt{5}} \Rightarrow r = \frac{r}{\sqrt{5}}$$

$$S = \pi r^2 = \left(\frac{r\sqrt{5}}{5}\right)^2 \pi = \frac{r^2}{5} \pi$$

$$B, A, M \Rightarrow (3, 2)$$

$$M_{AB} = \frac{2-1}{1-1} = -1 \Rightarrow m_{CH} = 1 \quad y = x + b \xrightarrow{1} y = x + 2$$

$$d = \frac{|2-3+2|}{\sqrt{1+1}} = \frac{\sqrt{2}}{2}$$

$$(r_m - r)k_a(\delta - m)y - V = 0 \Rightarrow y = \frac{(r - r_m)k_a V}{(\delta - m)(r_m - r)} \quad \text{mm/s} \quad (4)$$

$$(m+1)k_a - (r_m - r)y = 0 \Rightarrow y = \frac{m+1}{r_m - r} k_a \quad (5)$$

$$\Rightarrow \frac{r - r_m}{\delta - m} \times \frac{m+1}{r_m - r} = -1 \rightarrow \delta m^2 - 1 r_m + 1 r = 0 \rightarrow \Delta = 0$$

بازایی هر نقطه این دو خط عمود است

A $\rightarrow \begin{cases} k_a y = r \\ -r k_a y = -1 \end{cases} \rightarrow \begin{cases} k = -\frac{r - r}{1 r} = 1 \\ y = \frac{-1 r}{1 r} = -1 \end{cases} \quad A = \begin{vmatrix} 1 \\ -1 \end{vmatrix}$
AC, AB دایره

B $\rightarrow \begin{cases} k_a y = r \\ k_a y = r \end{cases} \rightarrow \begin{cases} k = -\frac{1 - r}{1 - r} = 0 \\ y = \frac{r - r}{1 - r} = -1 \end{cases} \quad B = \begin{vmatrix} 0 \\ -1 \end{vmatrix}$
AB, BC دایره

C $\rightarrow \begin{cases} -r k + y = -1 \\ k_a y = r \end{cases} \rightarrow \begin{cases} k = -\frac{r+1}{-r-1} = \frac{\delta}{r} \\ y = \frac{-1+1}{-r-1} = \frac{V}{r} \end{cases} \quad C = \begin{vmatrix} \frac{\delta}{r} \\ \frac{V}{r} \end{vmatrix}$

CB میانه $\rightarrow \begin{vmatrix} \frac{1}{r} \\ \frac{V}{r} \end{vmatrix} \rightarrow AM = \sqrt{\frac{r^2 + V^2}{r}} = \frac{\delta \sqrt{r}}{r}$

$AH = \frac{|1 r - r|}{\sqrt{1 r}} = \sqrt{r} \quad \frac{AM}{AH} = \frac{\delta}{r}$

$y = -\frac{1}{r} k_a b$

$1: \rightarrow \frac{|1 r - b|}{\sqrt{1 r}} = \frac{|b|}{\sqrt{r}} = \sqrt{r} \Rightarrow |b| = r\sqrt{r} + \sqrt{r} = \delta$

$AB = \sqrt{r^2 + 0} = \delta \sqrt{r}$

$$my - rK - ym \rightarrow y = \frac{r}{m} m \quad (P) \quad \text{نقطه } (0, r) \quad (A)$$

$$y + mK = K_0 \rightarrow y = (1-m)K_0 \quad (P)$$

$$y_B = \frac{r}{m} K_B + y \xrightarrow{y=0} \frac{r}{m} K_B + 0 = 0 \rightarrow K_B = -\frac{y}{r}$$

$$y_C = (1-m)K_C + y \xrightarrow{y=0} K_C = \frac{y}{m-1}$$

$$A = \begin{vmatrix} 0 \\ 1 \end{vmatrix} \quad B = \begin{vmatrix} \frac{y}{r} \\ 0 \end{vmatrix} \quad C = \begin{vmatrix} \frac{y}{m-1} \\ 0 \end{vmatrix}$$

$$|K_B - K_C| = \frac{\delta}{r} \rightarrow \left| \frac{r}{m-1} + \frac{y}{r} \right| = \frac{\delta}{r} \quad \begin{matrix} m=1 \\ m=-1 \end{matrix} \quad r(-1) = -r$$

$$d_1: y = rK - r \quad d_2: y = rK - c \quad d_3: y = rK - \frac{c+r}{r} \quad (4)$$

$$d_3(0, m) \rightarrow -r = r - \frac{c+r}{r} \Rightarrow c = r$$

$$m=1 \Rightarrow m_{AA'} = -1$$

$$y - y_A = -1(K - K_A) \Rightarrow y - r = -K_A \Rightarrow y = -K_A + r \quad (L)$$

$$K_A \delta c - K_A r \Rightarrow K = -1, y = r \Rightarrow m \begin{cases} \frac{ca}{r} = -1 \Rightarrow a = -r \\ \frac{ba}{r} = r \Rightarrow b = r \end{cases}$$

$$r(b-a) = r(r+r) = 2r$$

بعضی به بعضی