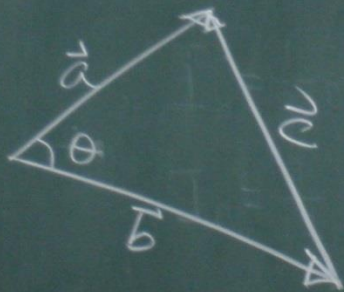


$$\vec{c} = \vec{a} - \vec{b} \quad \|\vec{a}\| = |\vec{a}|$$



$$|\vec{a}| = \sqrt{\vec{a} \cdot \vec{a}} = a$$

$$|\vec{b}| = \sqrt{\vec{b} \cdot \vec{b}} = b$$

$$|\vec{c}| = |\vec{a} - \vec{b}| \neq |\vec{a}| - |\vec{b}|$$

$$= \sqrt{(\vec{a} - \vec{b}) \cdot (\vec{a} - \vec{b})}$$

$$\vec{a} \cdot \vec{b} = \vec{b} \cdot \vec{a}$$

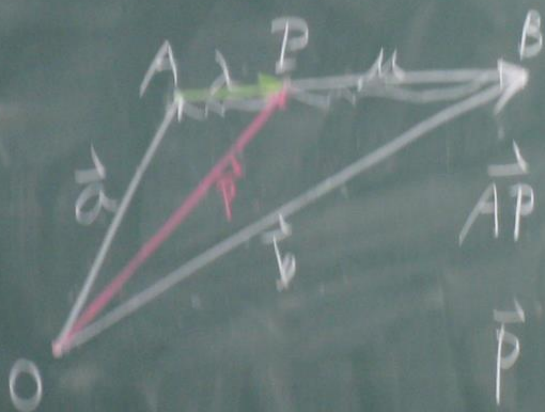
$$\vec{a} \times \vec{b} = -\vec{b} \times \vec{a}$$

$$|\vec{c}| = \sqrt{\vec{a} \cdot \vec{a} - 2\vec{a} \cdot \vec{b} + \vec{b} \cdot \vec{b}}$$

\parallel
 c

$$c^2 = a^2 + b^2 - 2\vec{a} \cdot \vec{b} = a^2 + b^2 - 2ab \cos \theta$$

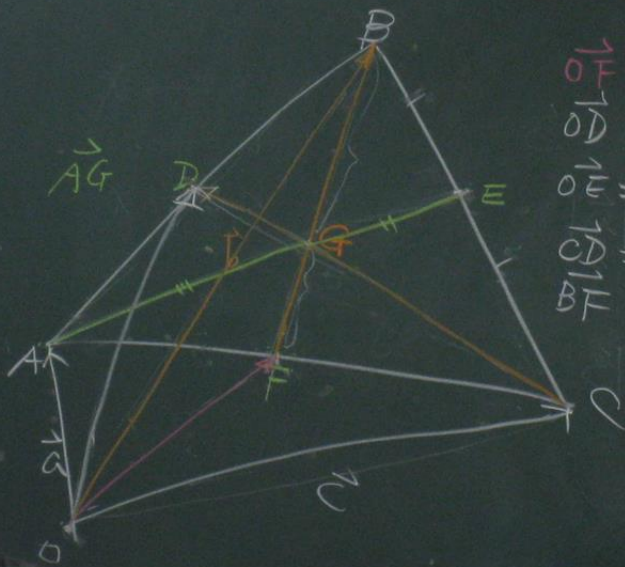
$$\vec{AB} = \vec{b} - \vec{a}$$



$$\vec{AP} = \frac{\lambda}{\lambda + \mu} \vec{AB} = \frac{\lambda}{\lambda + \mu} (\vec{b} - \vec{a})$$

$$\vec{p} = \vec{a} + \vec{AP} = \frac{\mu}{\lambda + \mu} \vec{a} + \frac{\lambda}{\lambda + \mu} \vec{b}$$

請到前面簽到



$$\vec{OF} = \frac{1}{2}(\vec{a} + \vec{c})$$

$$\vec{OD} = \frac{1}{2}(\vec{a} + \vec{b}) \quad \|\vec{a}\| = |\vec{a}|$$

$$\vec{OE} = \frac{1}{2}(\vec{b} + \vec{c})$$

$$\vec{CD} = \vec{OD} - \vec{c}$$

$$\vec{BF} = \vec{OF} - \vec{b}$$

$$= \frac{\vec{a} + \vec{c}}{2} - \vec{b}$$

$$\vec{a} \cdot \vec{b} = \vec{b} \cdot \vec{a}$$

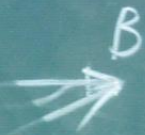
$$\vec{a} \times \vec{b} = -\vec{b} \times \vec{a}$$

$$|\vec{c}| = \sqrt{\vec{a} \cdot \vec{a} - 2\vec{a} \cdot \vec{b} + \vec{b} \cdot \vec{b}}$$

$$\equiv c$$

$$c^2 = a^2 + b^2 - 2\vec{a} \cdot \vec{b} = a^2 + b^2 - 2ab \cos C$$

$$\vec{AB} = \vec{b} - \vec{a}$$



$$\vec{AP} = \frac{\lambda}{\lambda + \mu} \vec{AB} = \frac{\lambda}{\lambda + \mu} (\vec{b} - \vec{a})$$

$$\vec{p} = \vec{a} + \vec{AP} = \frac{\mu}{\lambda + \mu} \vec{a} + \frac{\lambda}{\lambda + \mu} \vec{b}$$

$$\frac{1}{2}(\vec{a} + \vec{b})$$

$$\lambda + \mu \vec{c} = \frac{1}{\lambda + \mu} \left\{ \mu(\vec{a} + \vec{b}) + \lambda \vec{c} \right\}$$

$$= \frac{\mu \vec{a} + \mu \vec{b} + \lambda \vec{c}}{2(\lambda + \mu)}$$

$$\lambda + \mu = 1$$

$$\gamma + \delta = 1$$

$$\vec{AB} = \vec{b} - \vec{a}$$

$$\vec{c} = \frac{\gamma \vec{a} + 2\delta \vec{b} + \gamma \vec{c}}{2(\delta + \gamma)}$$

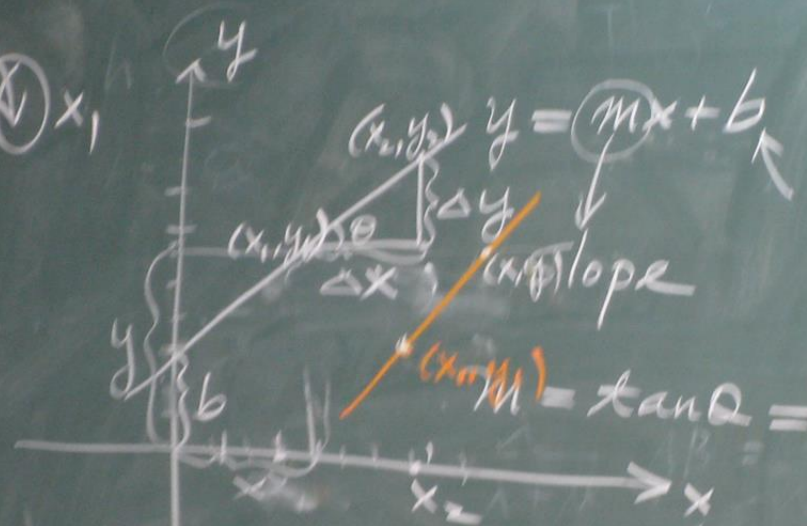
$$\frac{\mu}{\lambda + \mu} = \frac{\gamma}{\delta + \gamma}$$

$$\frac{\mu}{2(\lambda + \mu)} = \frac{\gamma}{\delta + \gamma}$$

$$\frac{\lambda}{\lambda + \mu} = \frac{\gamma}{2(\delta + \gamma)}$$

$$\left. \begin{array}{l} \mu = \gamma = \frac{2}{3} \\ \lambda = \delta = \frac{1}{3} \end{array} \right\}$$

$y_1 - x_1$



y-intercept
截距

$$m = \tan \theta = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

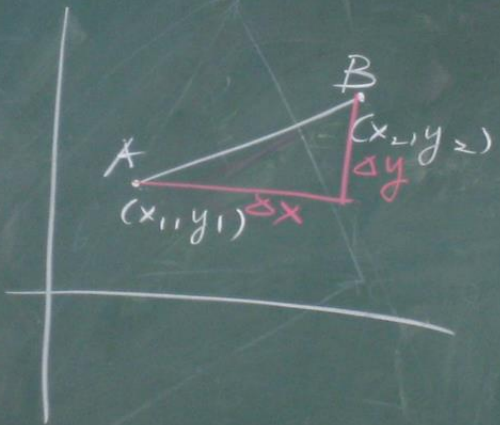
斜率

$$\frac{y_1}{x_1} (x - x_1)$$

$$\frac{y - y_1}{x - x_1} = m \Rightarrow y - y_1 = m(x - x_1)$$

$$y = m(x - x_1) + y_1 = mx + (y_1 - mx_1)$$

到

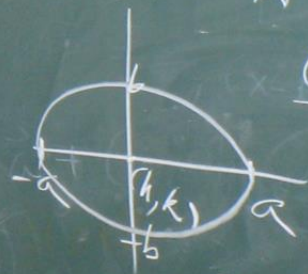


$$\underline{\underline{y = mx + b}}$$

$$AB = \sqrt{(\Delta x)^2 + (\Delta y)^2} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\Delta x = x_2 - x_1$$

$$\Delta y = y_2 - y_1$$



$$\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1$$

