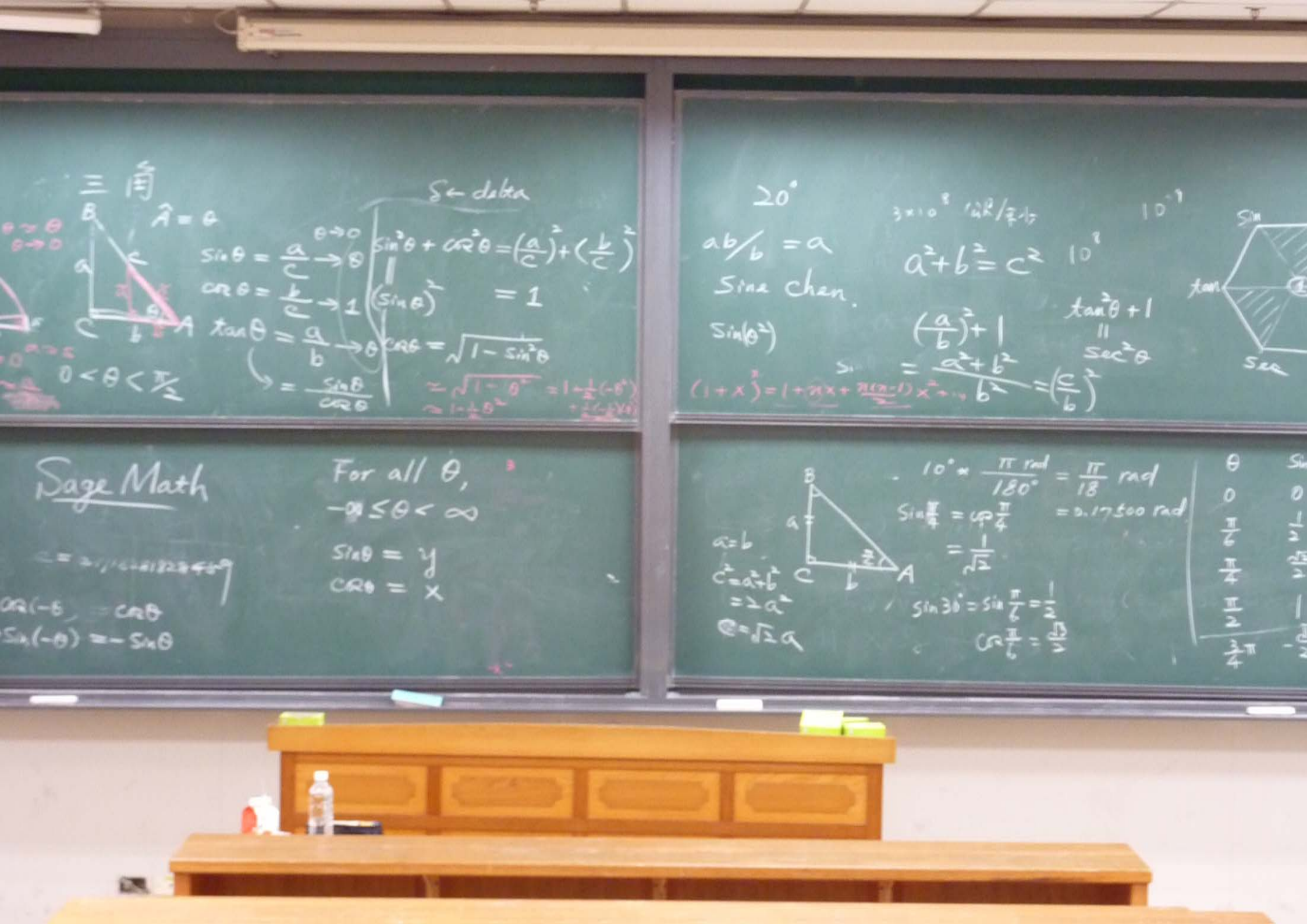
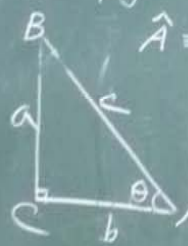

三角
δ ← delta
20°
Sage Math
For all θ,
$-\infty \le \theta < \infty$
$\sin\theta = y$
$\cos\theta = x$
$a^2+b^2=c^2$
$\sin^2\theta + \cos^2\theta = 1$
$\tan^2\theta + 1 = \sec^2\theta$
$\sin\theta = \frac{a}{c}$
$\cos\theta = \frac{b}{c}$
$\tan\theta = \frac{a}{b}$
$0 < \theta < \frac{\pi}{2}$
$10° = \frac{\pi}{180°}\ \text{rad} = \frac{\pi}{18}\ \text{rad}$
$= 0.17500\ \text{rad}$
$\sin\frac{\pi}{4} = \cos\frac{\pi}{4} = \frac{1}{\sqrt{2}}$
$\sin 30° = \sin\frac{\pi}{6} = \frac{1}{2}$
$\cos\frac{\pi}{6} = \frac{\sqrt{3}}{2}$
$c^2 = a^2+b^2 = 2a^2$
$c = \sqrt{2}a$
$(1+x)^n = 1 + nx + \frac{n(n-1)}{2}x^2 + \cdots$
θ
0
π/6
π/4
π/2
3/4 π

$\cot\theta = \frac{b}{a} = \frac{1}{\tan\theta}$ cotangent

$\sec\theta = \frac{c}{b} = \frac{1}{\cos\theta}$ Second ctg θ

三角



$\hat{A} = \theta$

$\sin\theta = \frac{a}{c}$

$\cos\theta = \frac{b}{c}$

$\tan\theta = \frac{a}{b}$

$0 < \theta < \pi/$

δ ← delta

$\sin^2\theta + \cos^2\theta = \left(\frac{a}{c}\right)^2 + \left(\frac{b}{c}\right)^2$

$(\sin\theta)^2 = 1$

$\cos\theta = \sqrt{1 - \sin^2\theta}$

20°

$ab/b = a$

Sine chen.

$\sin(\theta^2)$

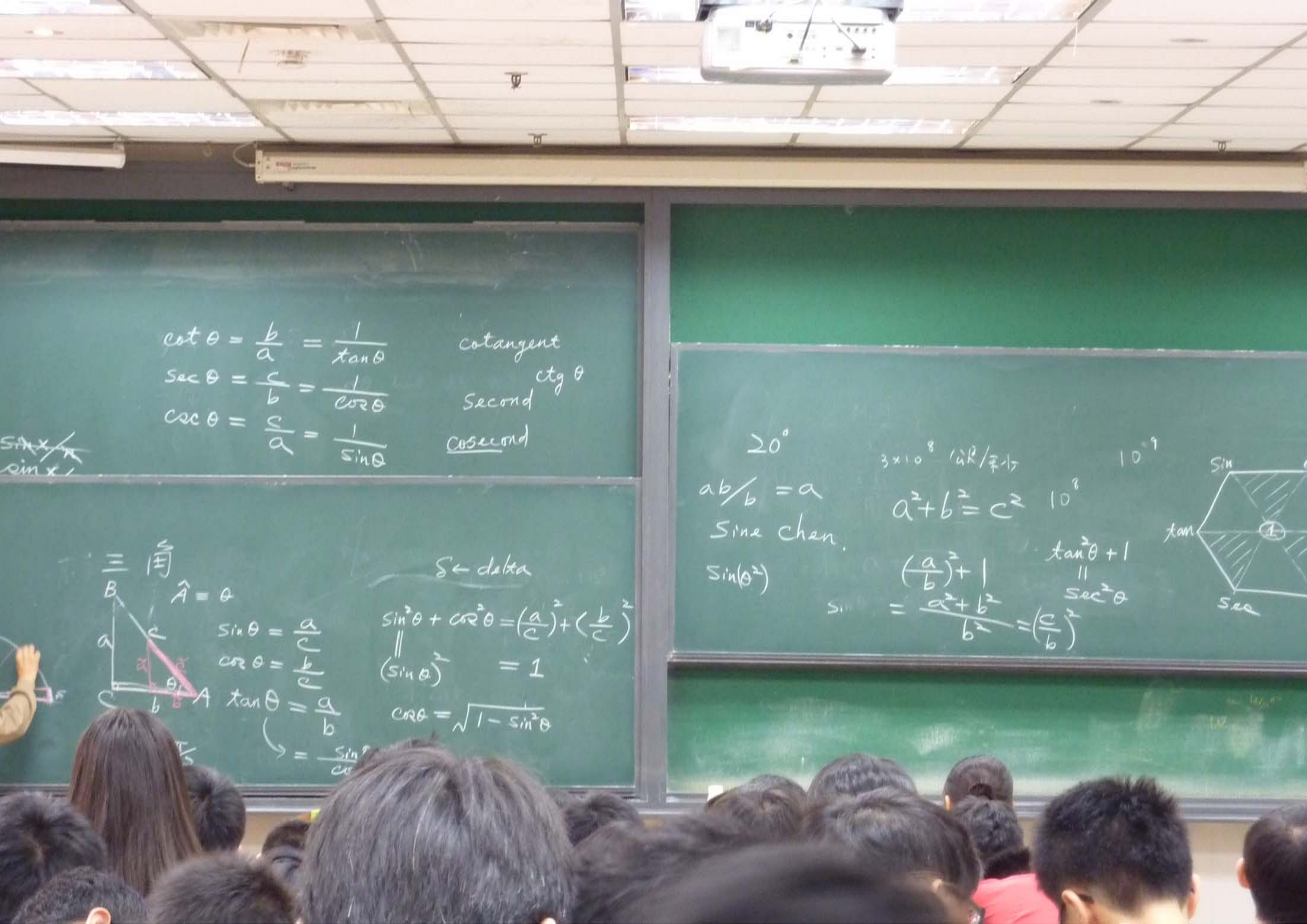
3×10^8 1/4R²/平行

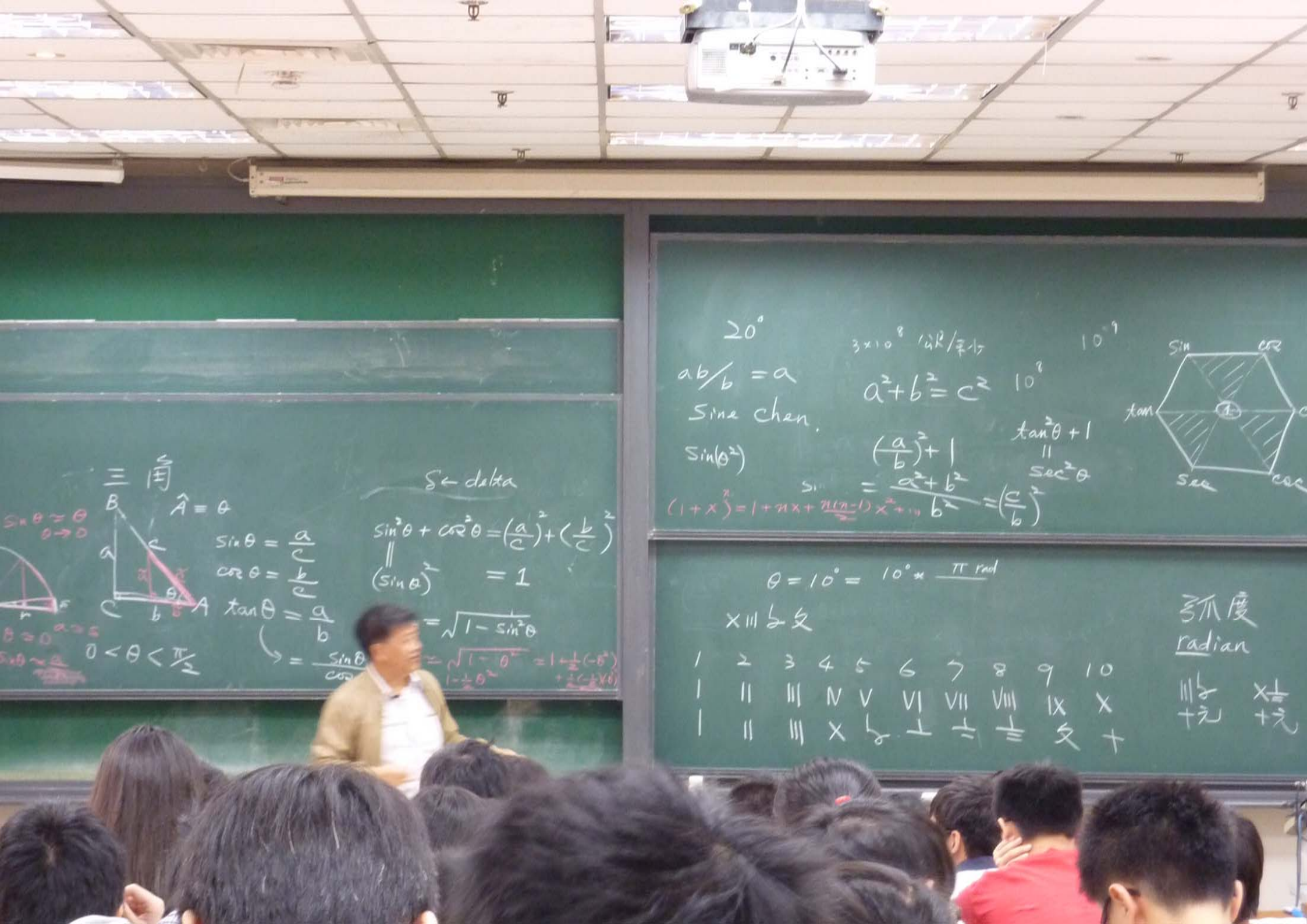
10^{-9}

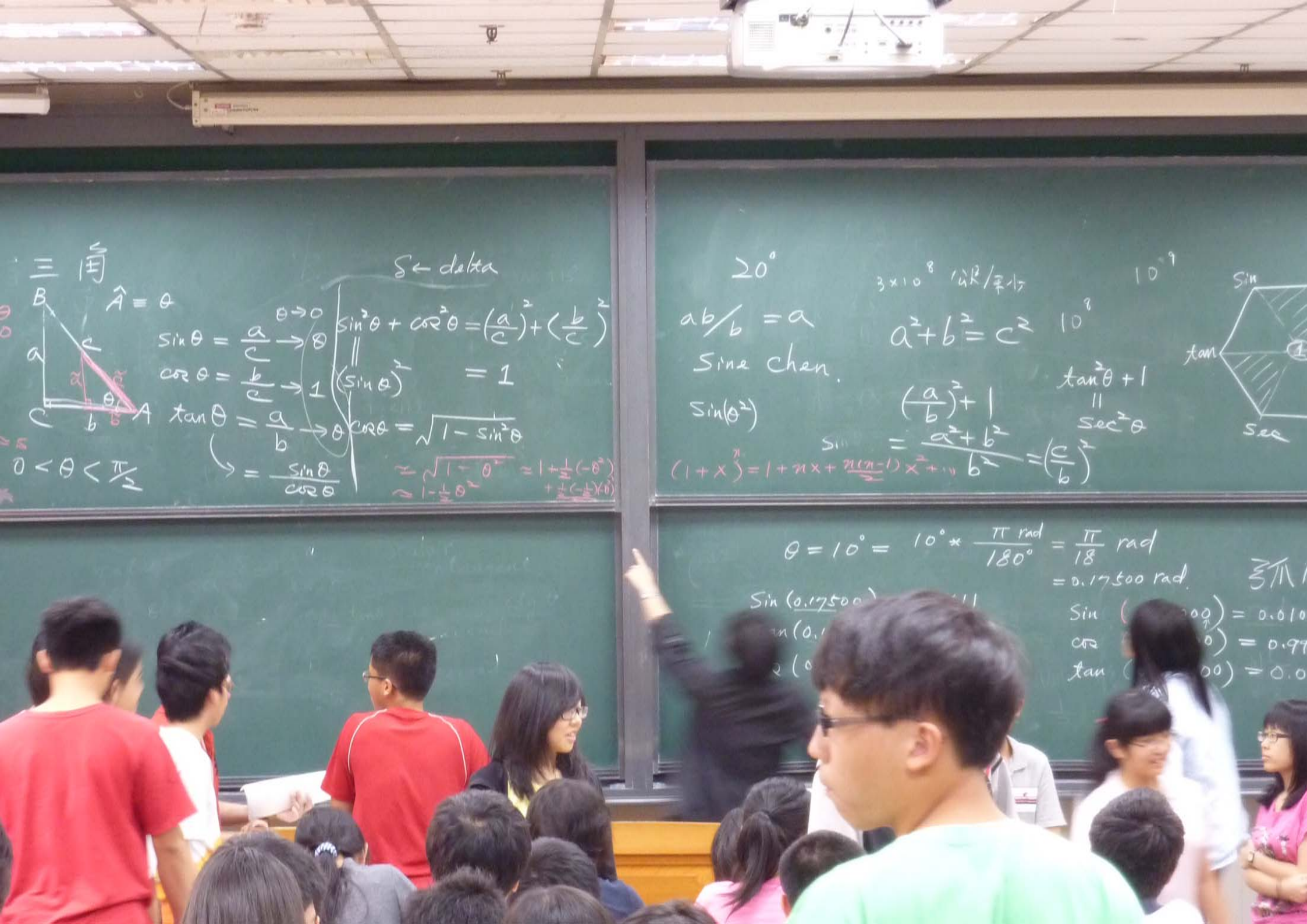
$a^2+b^2=c^2$ 10^8

$a = \overline{BC}$

$\sin\theta = \sin(\theta)$


cot θ = b/a = 1/tan θ
cotangent
ctg θ
sec θ = c/b = 1/cos θ
Second
csc θ = c/a = 1/sin θ
Cosecond
20°
ab/b = a
a² + b² = c²
10⁸
10⁹
Sine Chen.
sin(θ²)
tan²θ + 1 = sec²θ
sin
tan
sec
δ ← delta
三角
Â = θ
sin θ = a/c
cos θ = b/c
tan θ = a/b
sin²θ + cos²θ = (a/c)² + (b/c)²
(sin θ)²
= 1
cos θ = √(1 − sin²θ)


三角
$\hat{A} = \theta$
$\sin\theta = \frac{a}{c}$
$\cos\theta = \frac{b}{c}$
$\tan\theta = \frac{a}{b}$
$0 < \theta < \frac{\pi}{2}$
$\delta \leftarrow$ delta
$\sin^2\theta + \cos^2\theta = \left(\frac{a}{c}\right)^2 + \left(\frac{b}{c}\right)^2$
$(\sin\theta)^2 = 1$
$a^2 + b^2 = c^2$
$\tan^2\theta + 1 = \sec^2\theta$
$\theta = 10^\circ = 10^\circ \times \frac{\pi \text{ rad}}{}$
弧度
radian
sin
cos
tan
sec


三角
δ ← delta
$\hat{A} = \theta$
$\theta \to 0$
$\sin\theta = \frac{a}{c} \to \theta$
$\cos\theta = \frac{b}{c} \to 1$
$\tan\theta = \frac{a}{b} \to \theta$
$\sin^2\theta + \cos^2\theta = \left(\frac{a}{c}\right)^2 + \left(\frac{b}{c}\right)^2$
$(\sin\theta)^2 = 1$
$\cos\theta = \sqrt{1-\sin^2\theta}$
$\tan\theta = \frac{\sin\theta}{\cos\theta}$
$0 < \theta < \frac{\pi}{2}$
20°
3×10^8 公尺/秒
10^9
$ab/b = a$
Sine chen.
$\sin(\theta^2)$
$a^2+b^2=c^2$
$\left(\frac{a}{b}\right)^2 + 1$
$\tan^2\theta + 1$
$= \sec^2\theta$
$(1+x)^n = 1 + nx + \frac{n(n-1)}{2}x^2 + \cdots$
$\theta = 10° = 10° * \frac{\pi\ rad}{180°} = \frac{\pi}{18}\ rad$
$= 0.17500\ rad$
Sin
tan
sec

6 1010007

Date

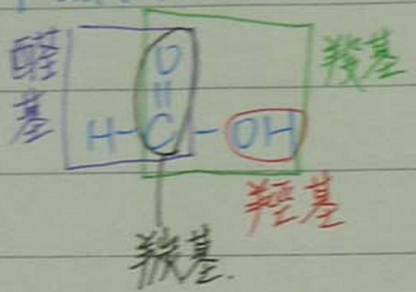
10/26 (四)

① π鍵算法：$(碳數+1) - \frac{氫數}{2}$

② 有氫鍵 ⇒ mp. bp 高

氫鍵 + 碳數少 ⇒ 可溶於水.

③ 甲酸(蟻酸)較特殊

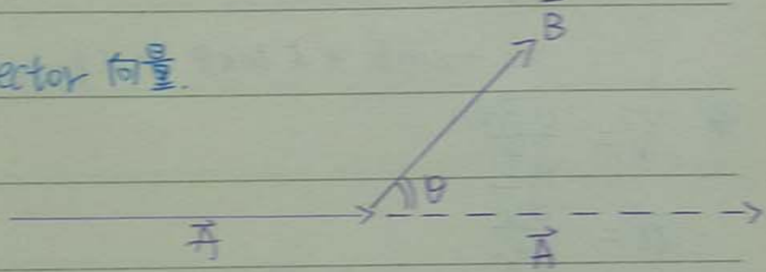


⇒ 同時具有醛基、羧基、羰基、羥基

有多侖銀鏡和斐林反應

10/27 (五)

Vector 向量.

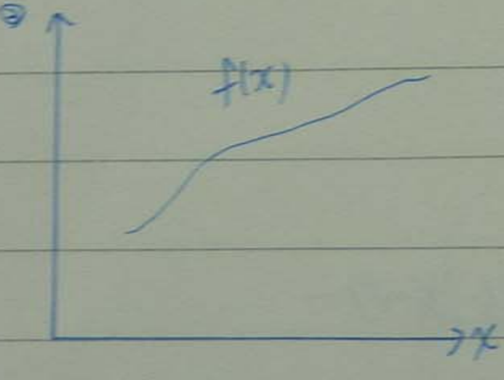


① $\vec{A} \cdot \vec{B} = |\vec{A}||\vec{B}| \cos\theta$

$|\vec{A} \times \vec{B}| = |\vec{A}||\vec{B}| \sin\theta$

方向：用右手判斷

②



$$f' = \frac{df}{dx} = \lim_{\Delta x \to 0} \frac{\Delta f}{\Delta x} = \lim_{\Delta x \to 0} \frac{f(x+\Delta x) - f(x)}{\Delta x}$$

$$f(x) = a_n x^n$$

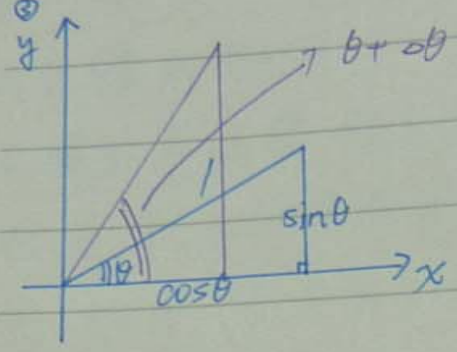
$$\Rightarrow \lim_{\Delta x \to 0} \frac{a_n(x+\Delta x)^n - a_n x^n}{\Delta x}$$

$$= \lim_{\Delta x \to 0} \frac{a_n[(x^n + nx^{n-1}\Delta x + \cdots + \Delta x^n) - x^n]}{\Delta x}$$

$$= n a_n x^{n-1}$$

GEE-JUMP

③



$$\frac{d\sin\theta}{d\theta} = \cos\theta$$

$$\frac{d\cos\theta}{d\theta} = -\sin\theta$$

$$\frac{de^{ax}}{dx} = ae^{ax}$$

④ $e^{i\theta} = \cos\theta + i\sin\theta$

$$\frac{de^{i\theta}}{d\theta} = ie^{i\theta}$$

$$\| \quad \frac{d}{d\theta}(\cos\theta + i\sin\theta)$$

$$= -\sin\theta + i\cos\theta = i(\cos\theta + i\sin\theta) = ie^{i\theta}$$

⑤ $\vec{V} = \frac{d\vec{r}(t)}{dt}$

$\vec{a} = \frac{d\vec{V}}{dt}$

⑥ 重力 $-G\frac{M_1 M_2}{r_{12}^2}\hat{r}_{12}$

EM $k\frac{q_1 q_2}{r_{12}^2}\hat{r}_{12}$

⑦ α, β, γ, δ

alpha beta gumma delta

⑧ $\cos\theta = \sqrt{1-\sin^2\theta} \simeq \sqrt{1-\theta^2} \simeq 1 + \frac{1}{2}(-\theta^2) + \frac{1}{2}(-\frac{1}{2})(-\theta^2)\cdots$

$\simeq 1 - \frac{1}{2}\theta^2$ ↑ θ 區近於0時.

$(1+x)^n = 1 + nx + \frac{n(n-1)}{2}x^2 + \cdots$

⑨

1	2	3	4	5	6	7	8	9	10
I	II	III	IV	V	VI	VII	VIII	IX	X
一	二	三	四	五	六	七	八	九	十

Date

⑫ $\theta = 10^\circ = 10^\circ \times \frac{\pi \text{ rad}}{180} = \frac{\pi}{18} \text{ rad}$ 弧度

$= 0.17500 \text{ rad}$ radian

$\sin(0.17500) = 0.17411$

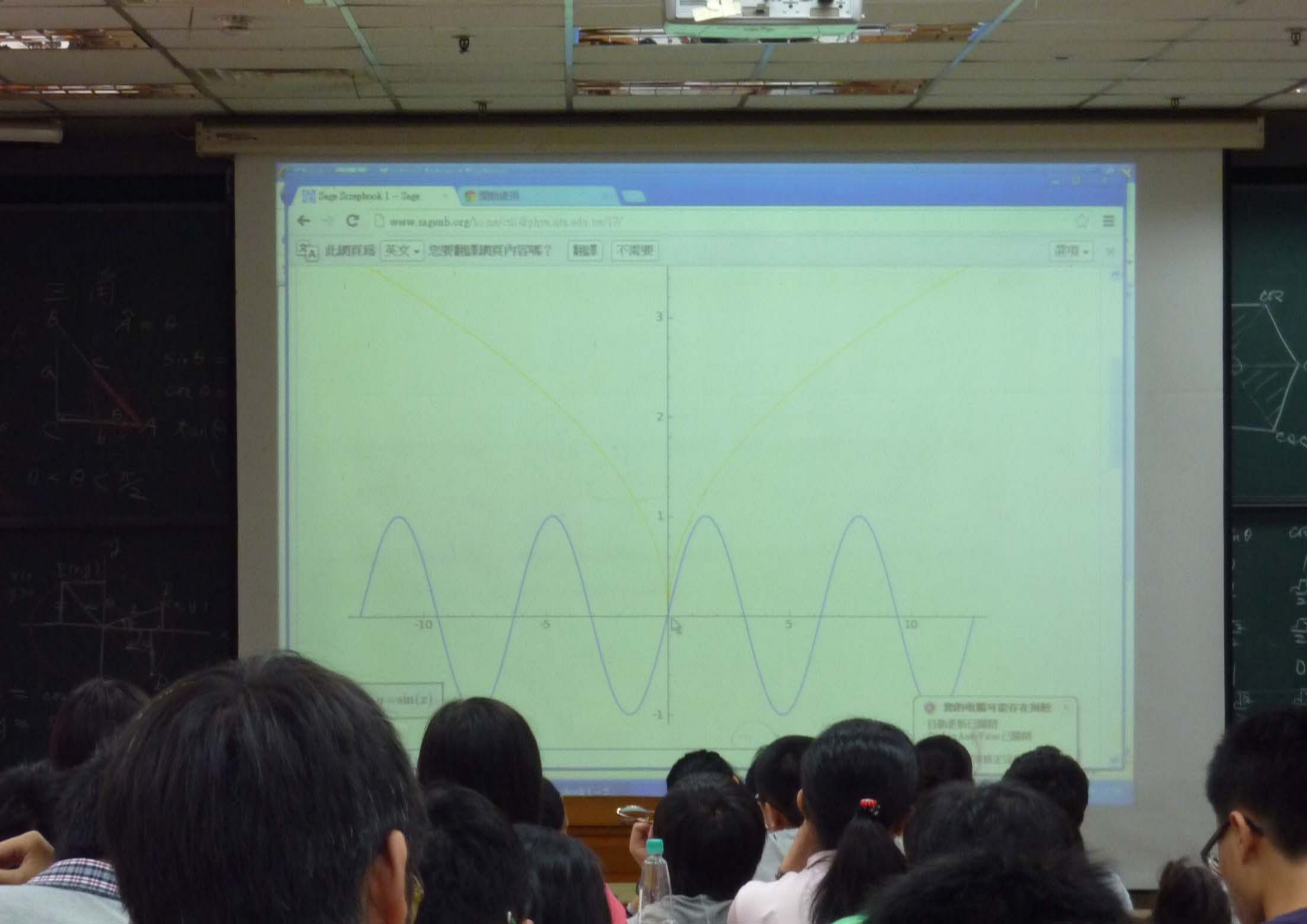
$\tan(0.17411) = 0.17611$

$\cos(0.17509) = 0.9847$

$\sin(0.01000) = 0.01000$

$\cos(0.01000) = 0.99995$

$\tan(0.01000) = 0.01000$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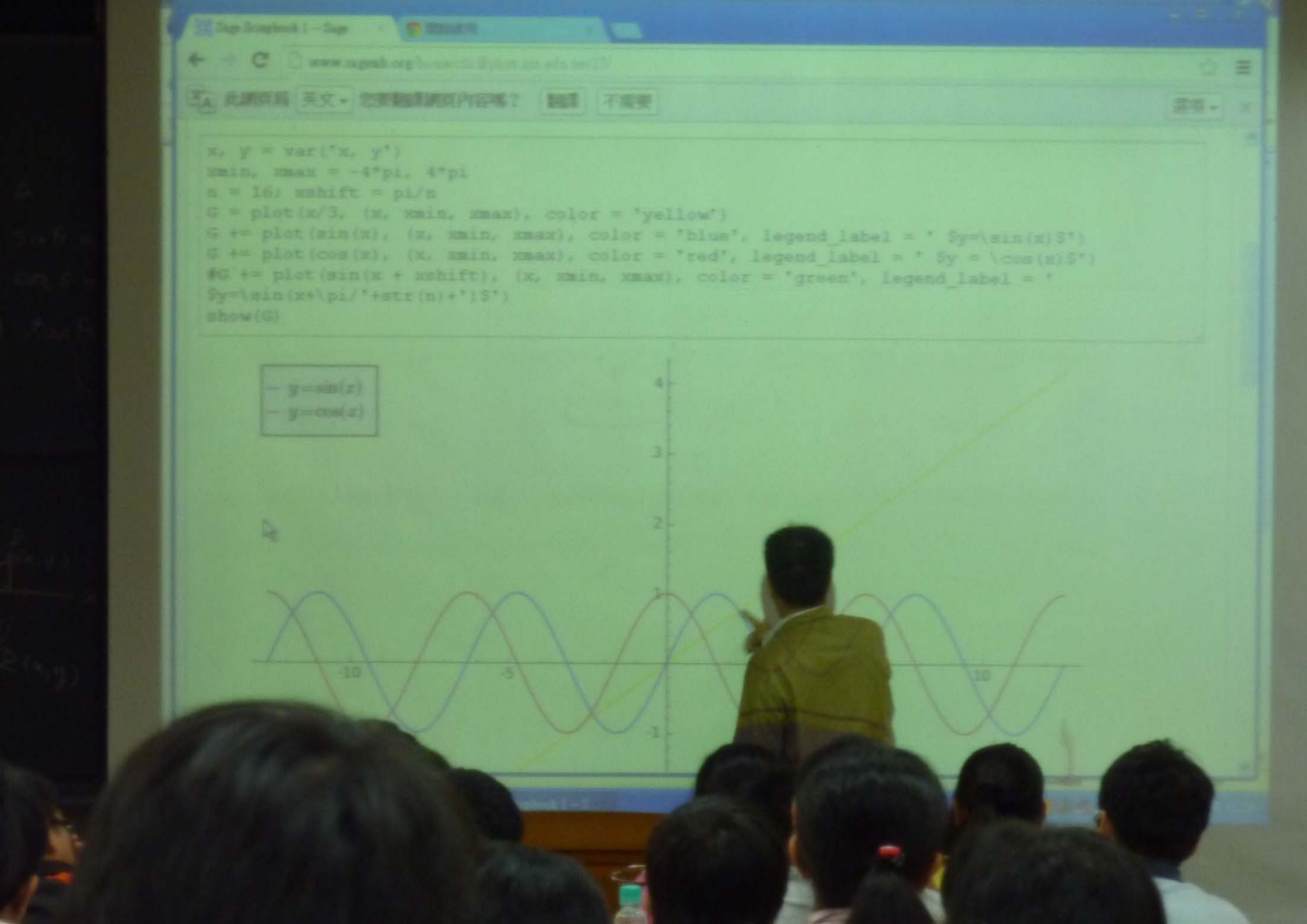
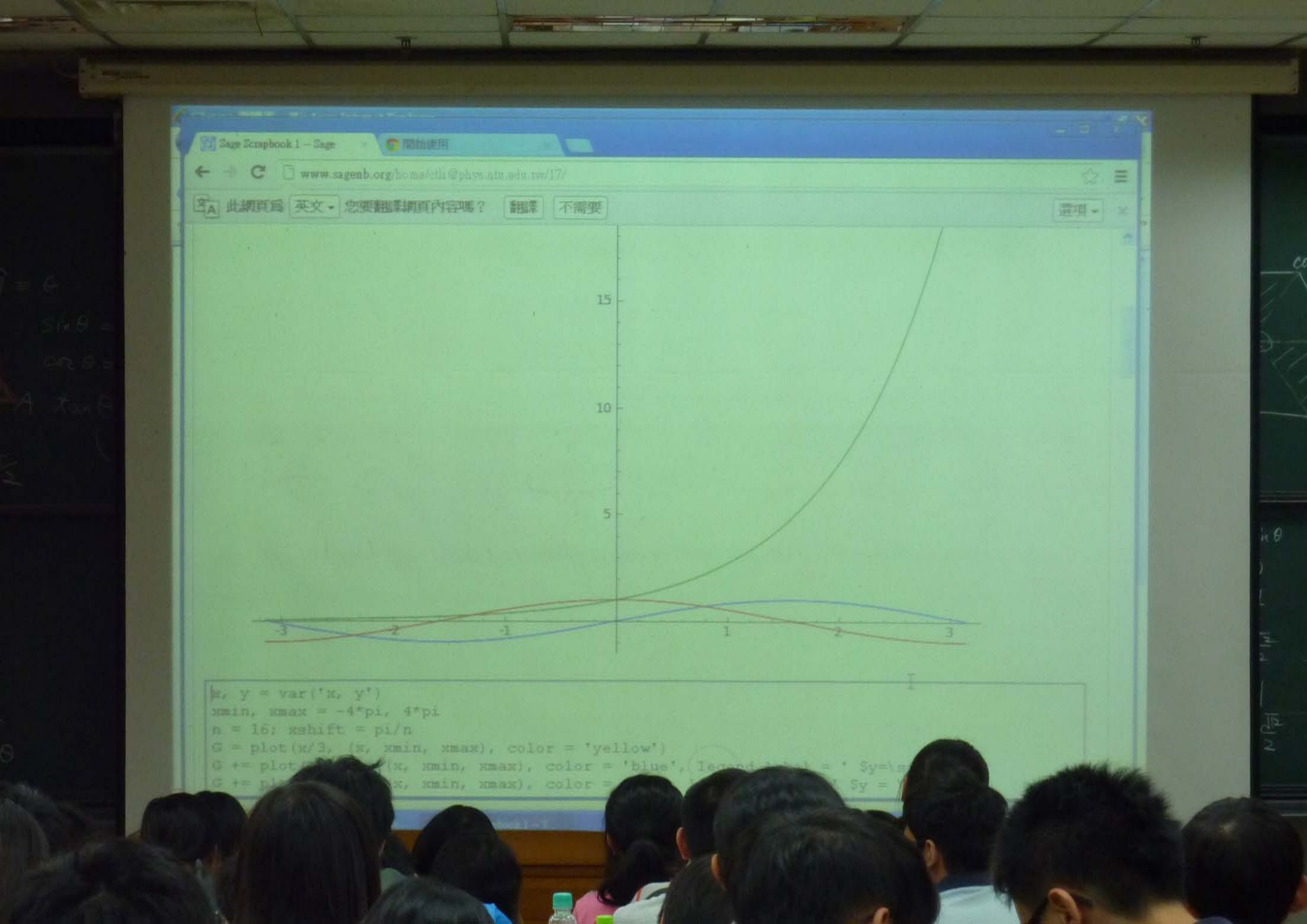
www.sagemb.org
3
2
1
-1
-10
-5
5
10


x, y = var('x, y')
xmin, xmax = -4*pi, 4*pi
n = 16; xshift = pi/n
G = plot(x/3, (x, xmin, xmax), color = 'yellow')
G += plot(sin(x), (x, xmin, xmax), color = 'blue', legend_label = ' $y=\sin(x)$')
G += plot(cos(x), (x, xmin, xmax), color = 'red', legend_label = ' $y = \cos(x)$')
#G += plot(sin(x + xshift), (x, xmin, xmax), color = 'green', legend_label = '
$y=\sin(x+\pi/'+str(n)+')$')
show(G)
y=sin(x)
y=cos(x)
4
3
2
1
-1
-10
-5
10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www.sagenb.org/home/cth@phys.ntu.edu.tw/17/
此網頁為 英文 您要翻譯網頁內容嗎？ 翻譯 不需要
選項
15
10
5
-3
-2
-1
1
2
3
x, y = var('x, y')
xmin, xmax = -4*pi, 4*pi
n = 16; xshift = pi/n
G = plot(x/3, (x, xmin, xmax), color = 'yellow')
G += plot
(x, xmin, xmax), color = 'blue',
G += pl
x, xmin, xmax), color =