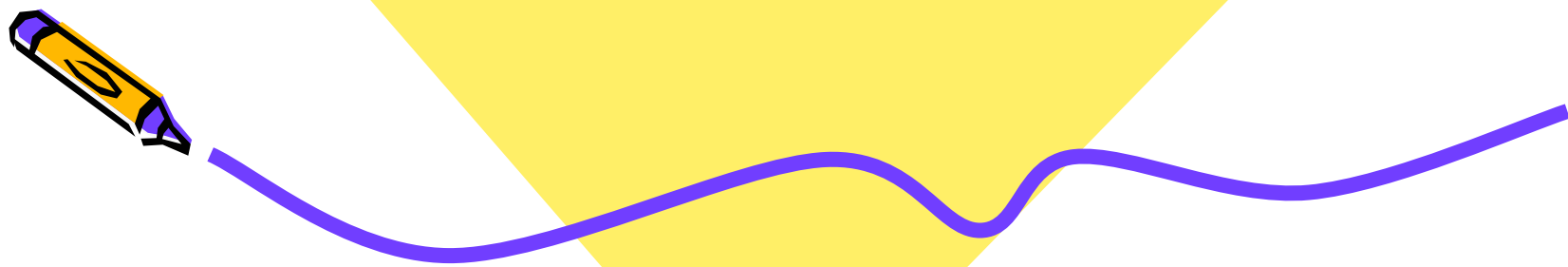
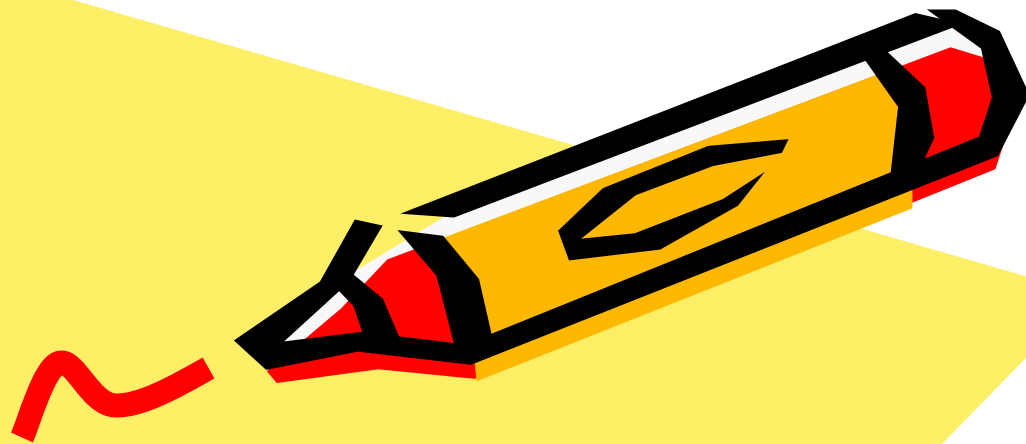


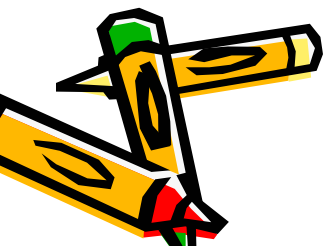
ywkim@korea.ac.kr

20



數學 100

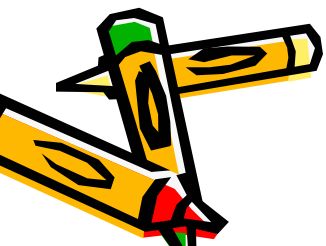
-
-
- —
-
-
- (?



(1)

- (geometry 幾何[ji he])

-



(2)

Newton(17c ~ 18c)

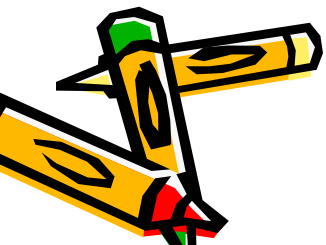
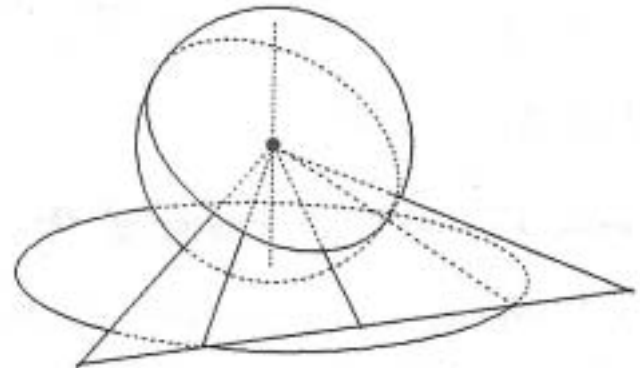
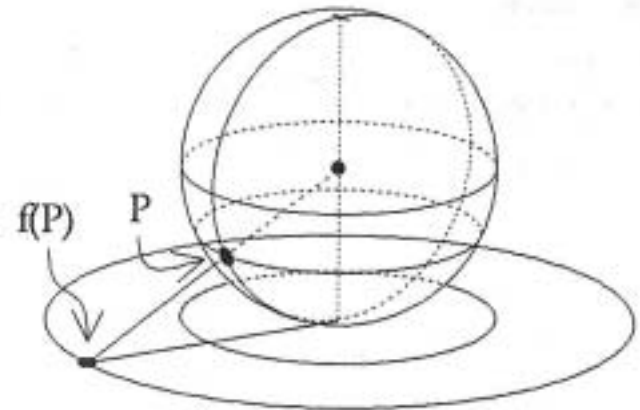
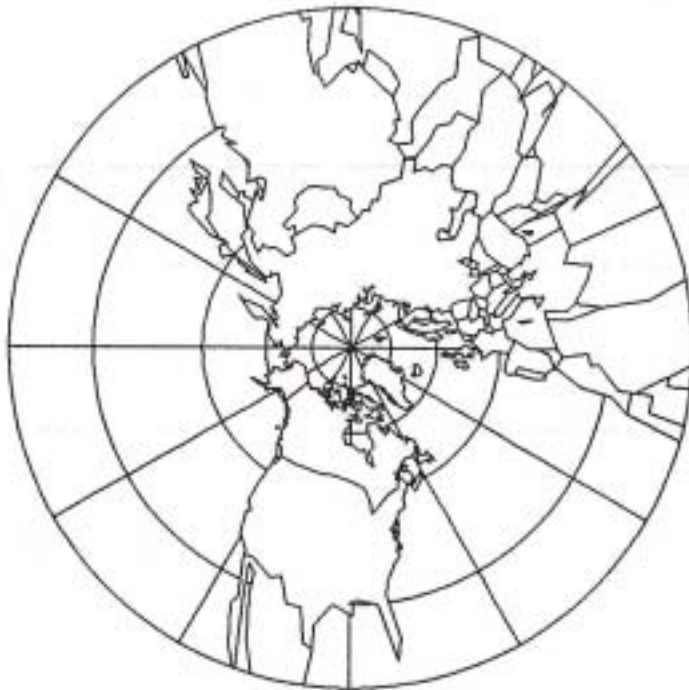
— ,
— ()



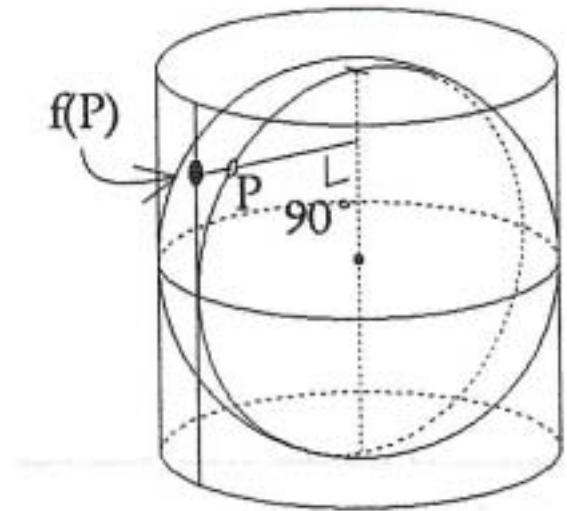
[]



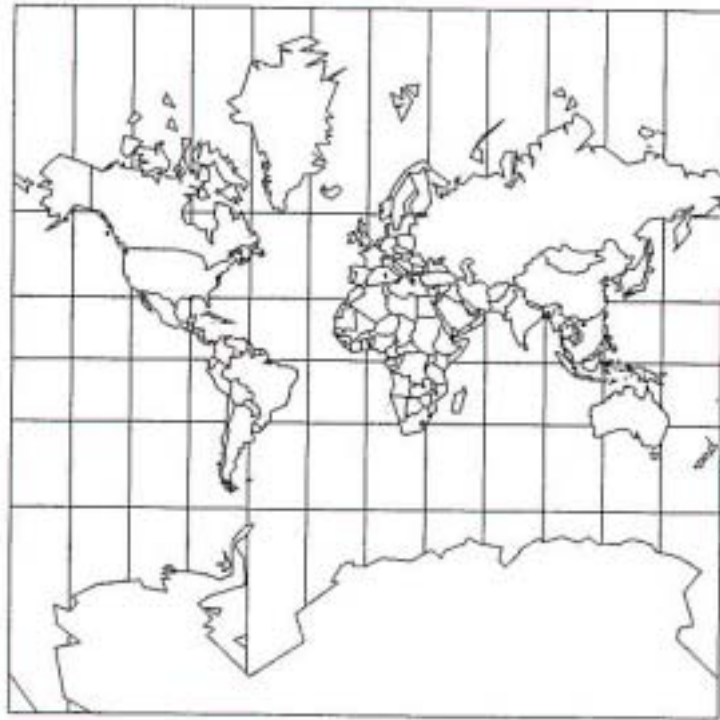
[]



[]



[]

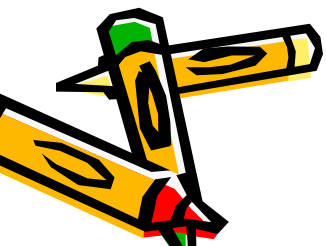
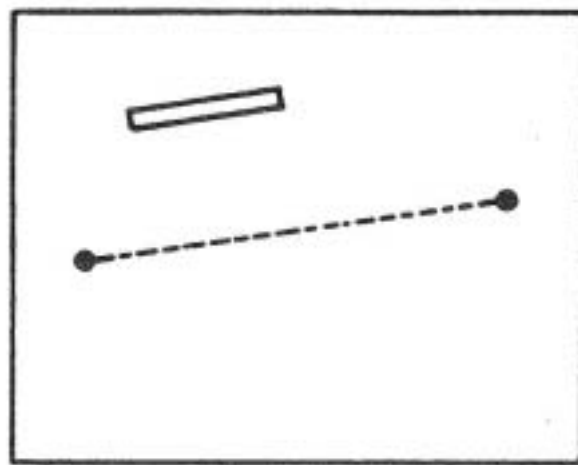
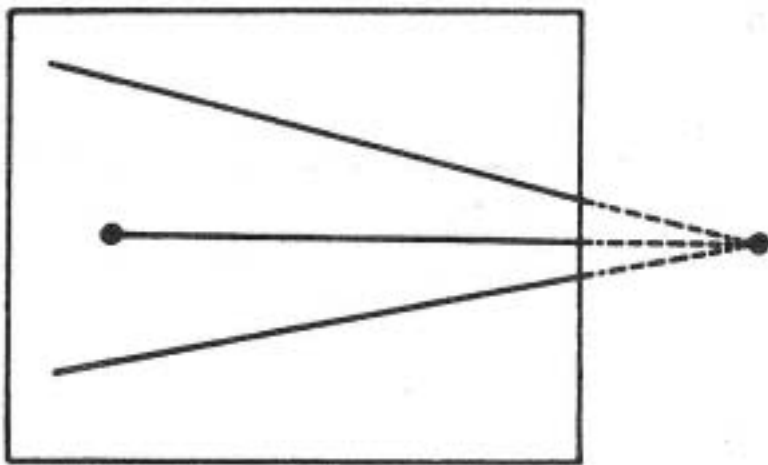


Mercator

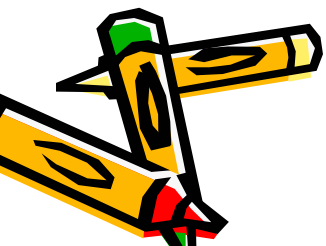
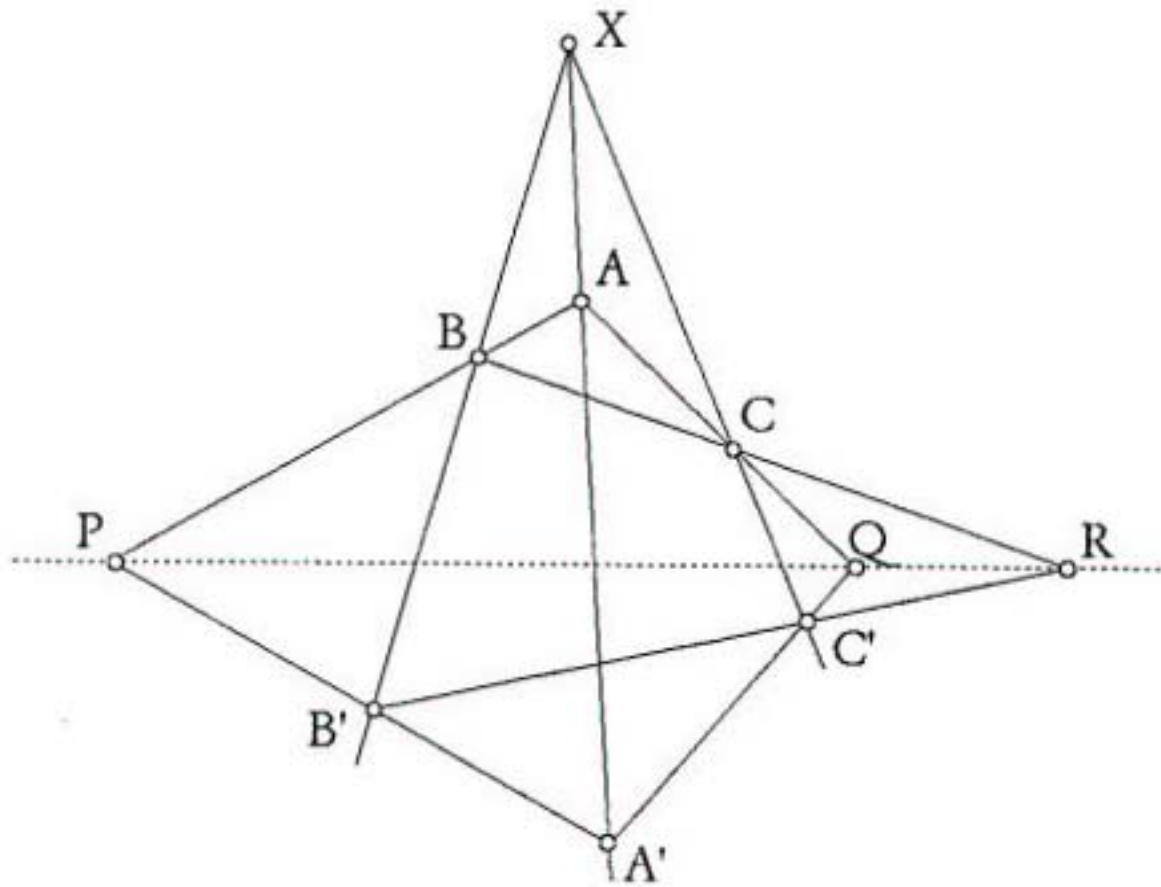
Stereographic ()



[]



[]



[] -

- $$F = ma$$



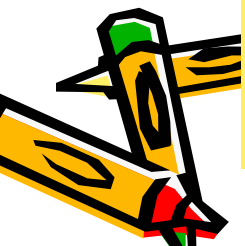
[] -

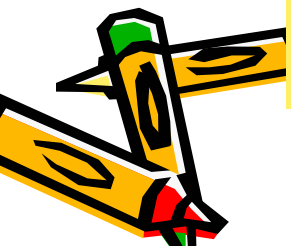
. 가

VS

2

가

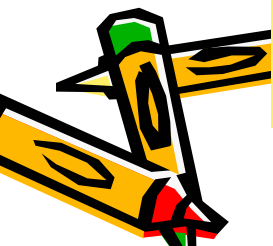




???

?

- (BC 540), (18c)
 , 가
- (19c)
 가 ,
- (BC 450 , 19c)
 ,
-



[]

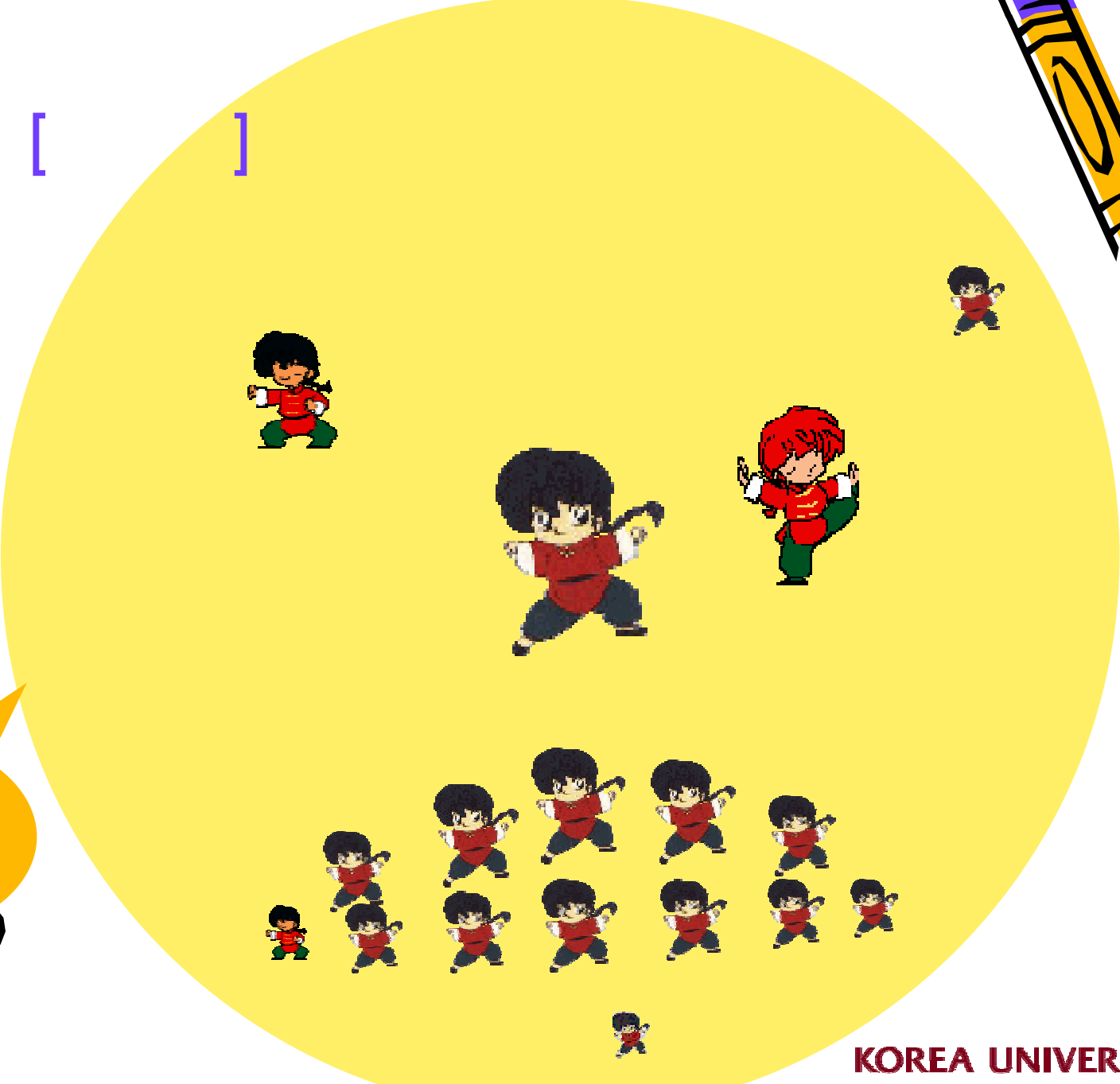
■ ?

2 가 ?

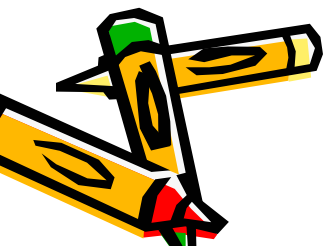
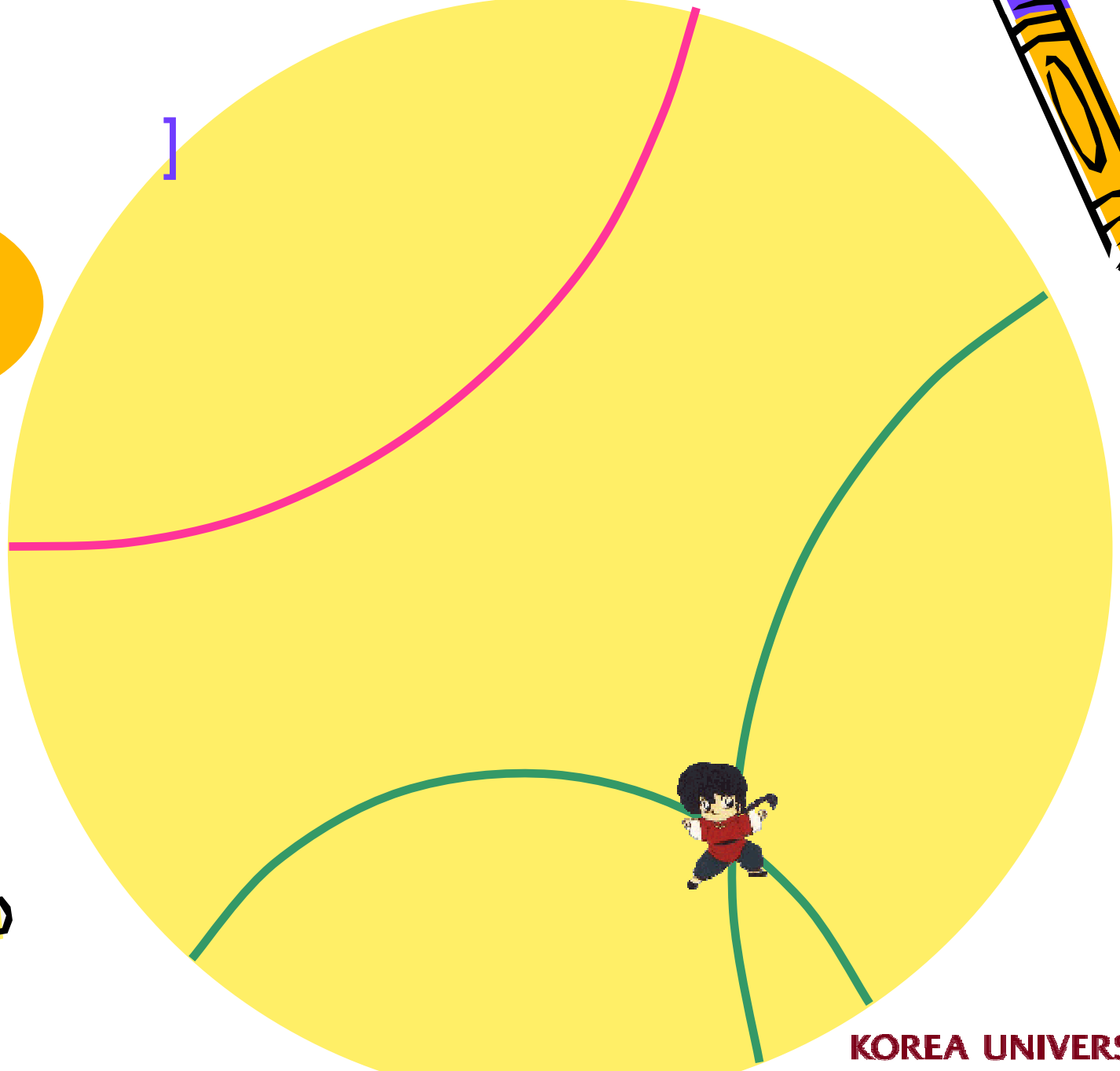
? ?

? ?





[]



[]

$$1 - 1 + 1 - 1 + 1 - \dots$$

$$\cdot (1 - 1) + (1 - 1) + (1 - 1) + \dots$$

$$\cdot 1 + (-1 + 1) + (-1 + 1) + \dots$$

[]

$$\dots + \frac{1}{x^2} + \frac{1}{x} + 1 + x + x^2 + \dots$$

$$= \frac{1}{1 - \frac{1}{x}} + \frac{x}{1 - x} = \frac{x}{x - 1} + \frac{x}{1 - x} = 0$$

100

-
- ()
-
-
-



100



(1)

가

가

...

“

,

”

...

...

...

?R%U@S#S & E*L!L \$



(2)

가

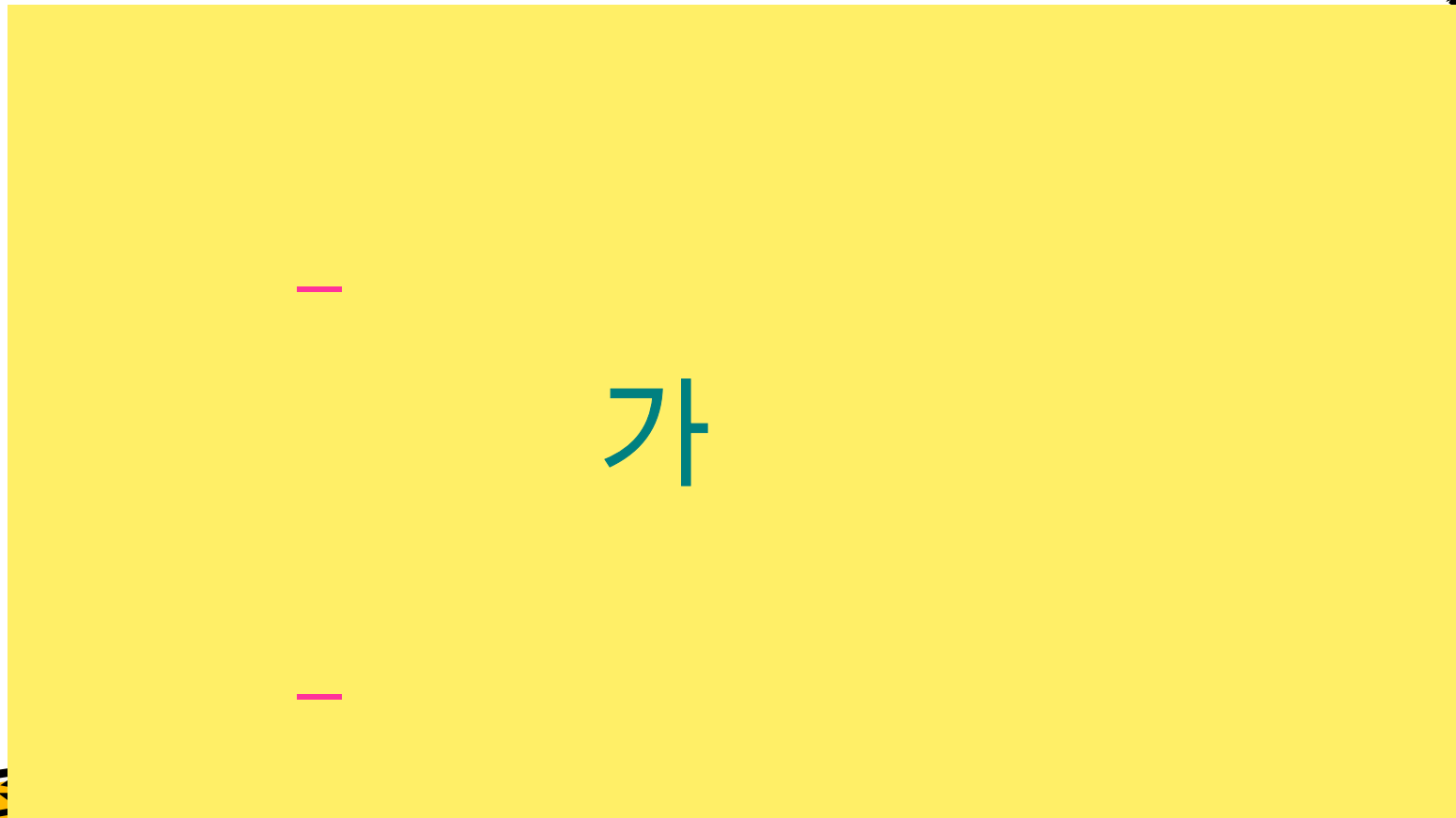
가

26

π π



가



가



가

—

stability, chaos

—

- setup





,

■

1 가?

1 1 가?

(1 = 1 ?)

1 가?



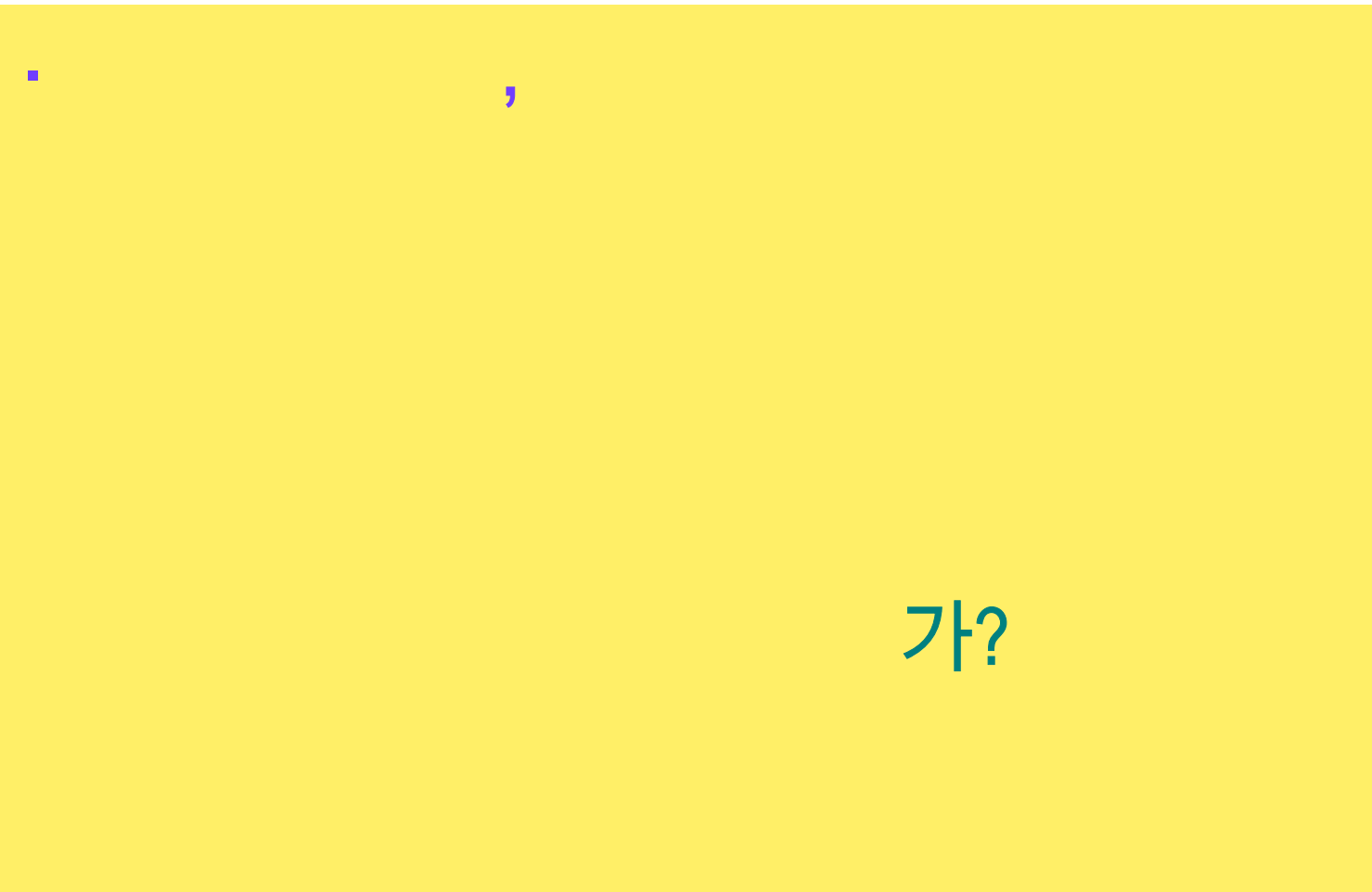
[20]

■

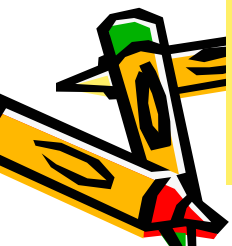
Dedekind



[20]



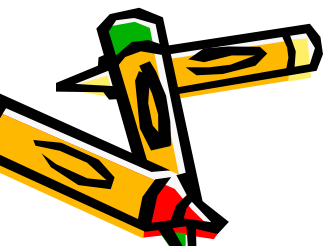
가?



[20]



[20]



[20]

· 20

Still “ ” “ ”

[20]

■

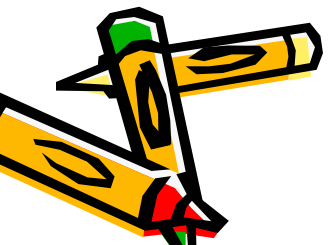
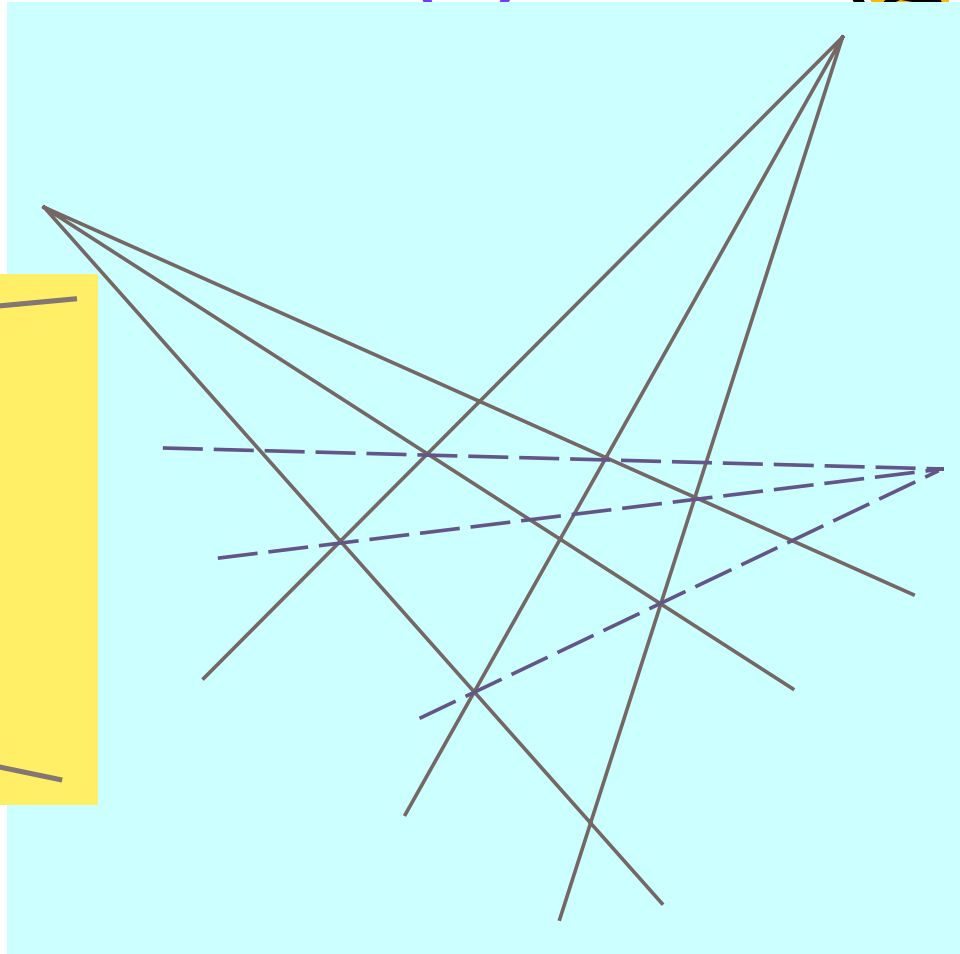
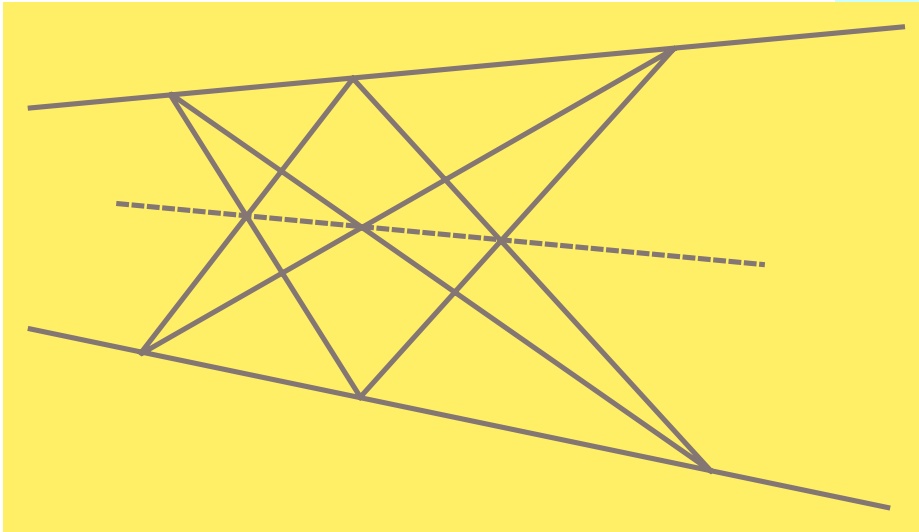
가 ⇒

—
—



[]

(1)



[]

(2)

·

$$ax+by(+1)=0$$

: (x, y)

: (a, b)

·

$$xa+yb(+1)=0$$

: (x, y)

: (a, b)

·

... ???

가

(3)

[]

· : $x, p=(x, y)$

· : $f(x), f(p)$

$f(x)$ $f(x)$

$f(p)$ $f(p)$

· : $A=\{p:f(p)=0\}$

$I=\{g:g(p)=0 \text{ for all } p \text{ in } A\}$

A defines I and I defines A



가

■

■

--

()

--

()

--

(,)

--

()

--

(,)

--





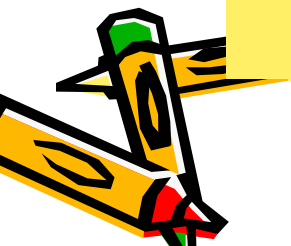
가

-
-

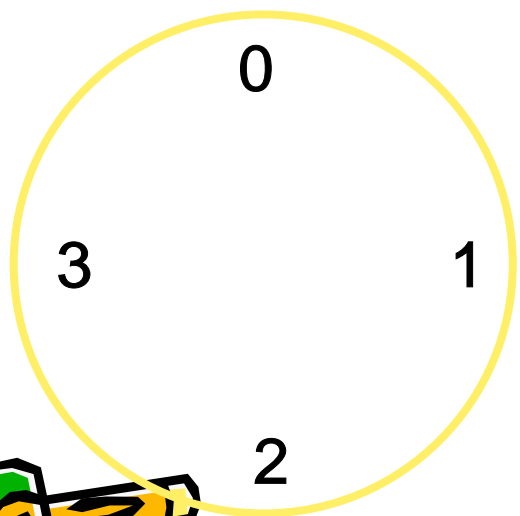
가

???

!!

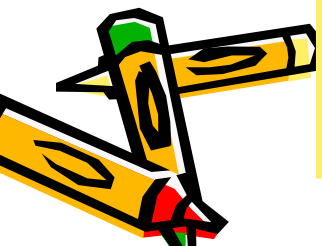
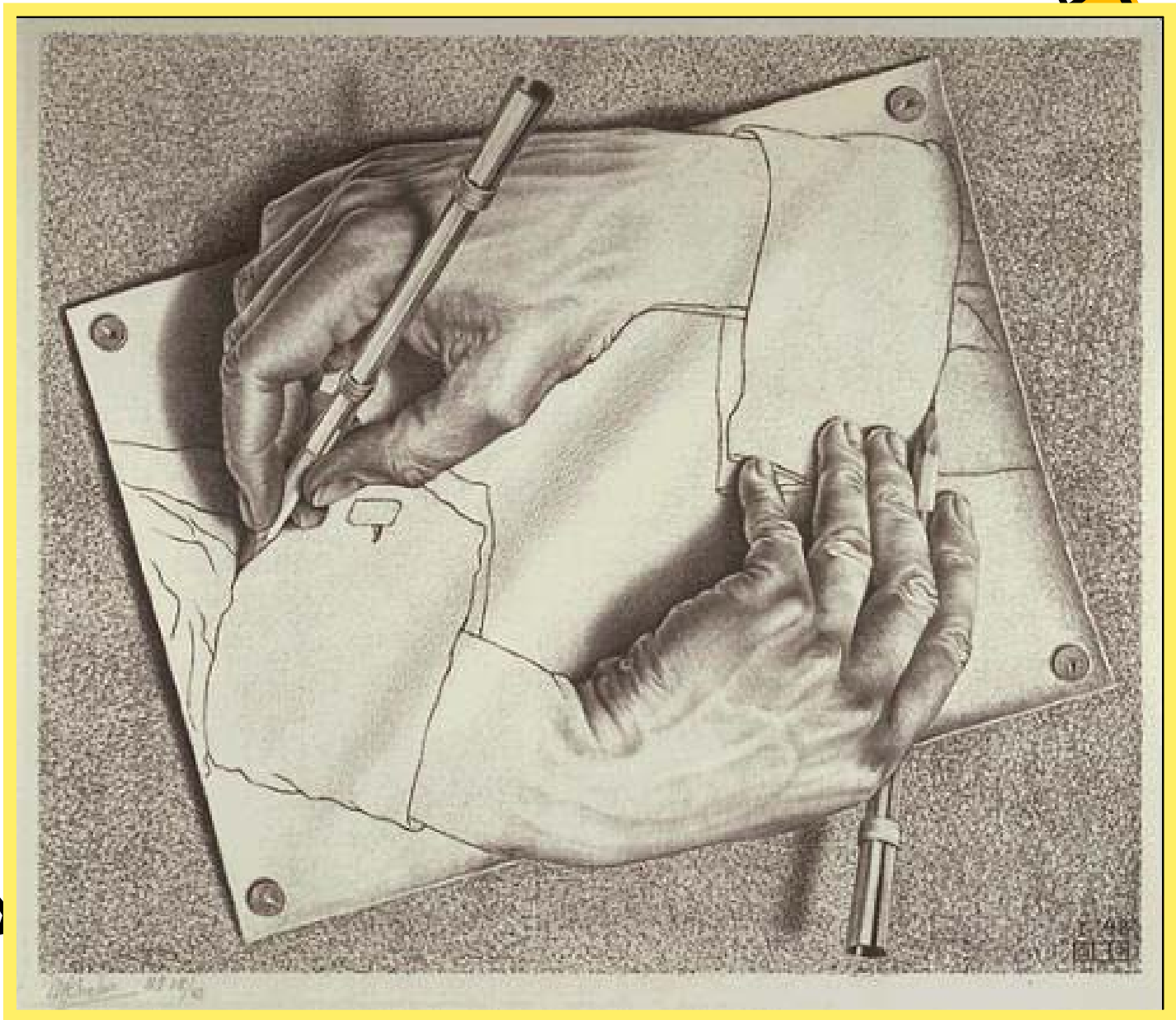


[]



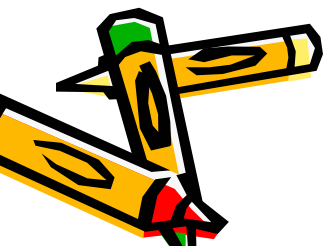
$\{0, i, -1, -i\}$

90 -





||



가

Vs

-> Murakami Haruki ?

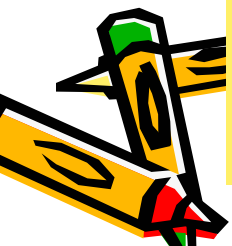
()

가 ?

VS

가

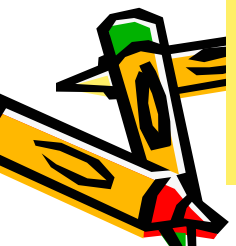
가 ?



()

- VS
- 가

()



()

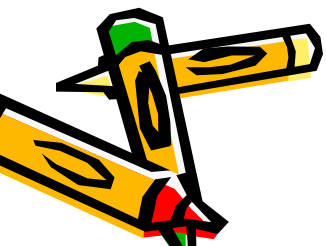
-
- VS
- discrete

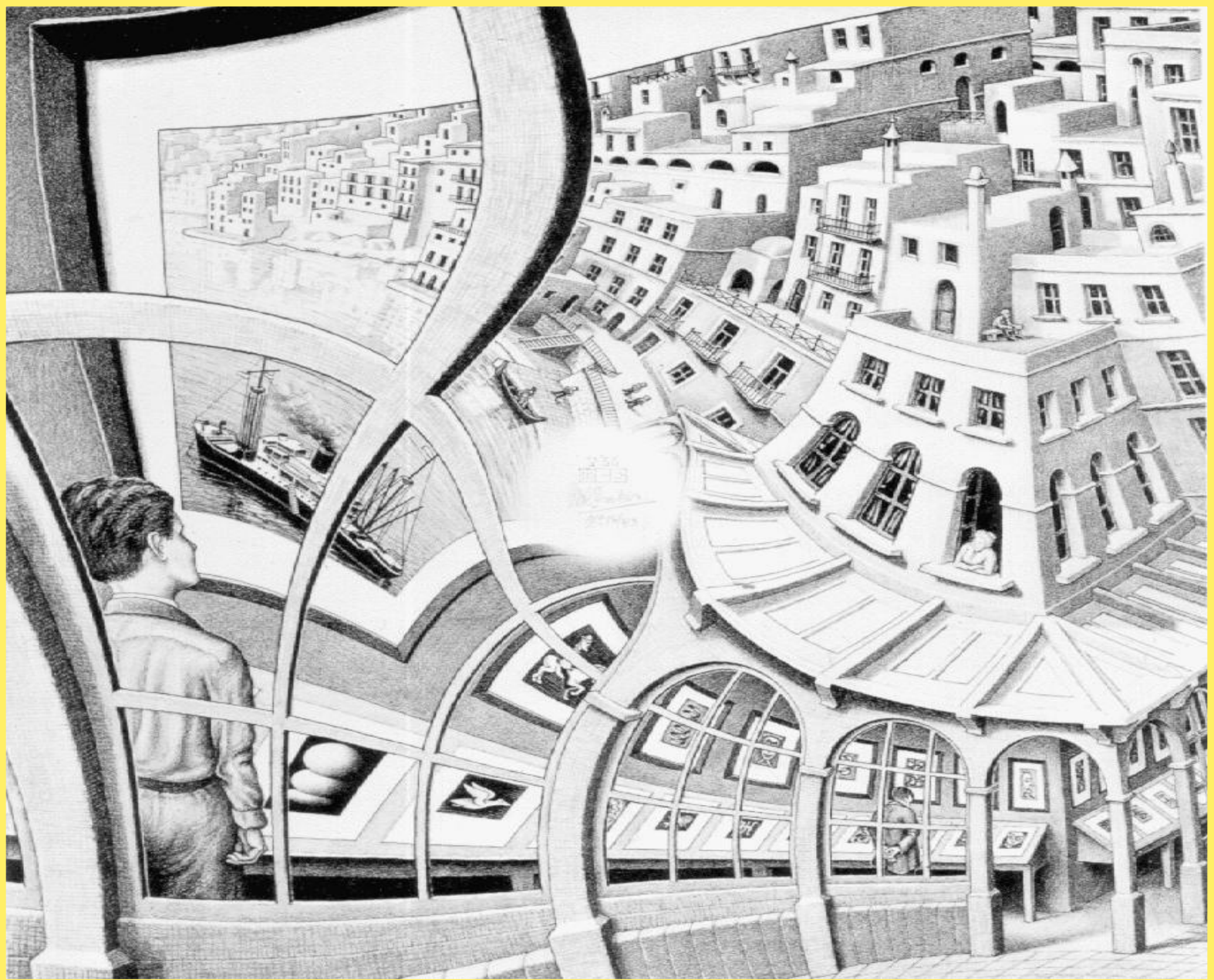
/ 가 가

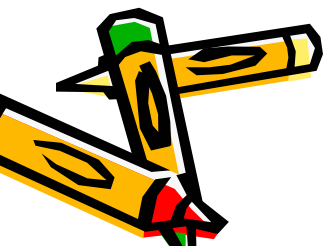
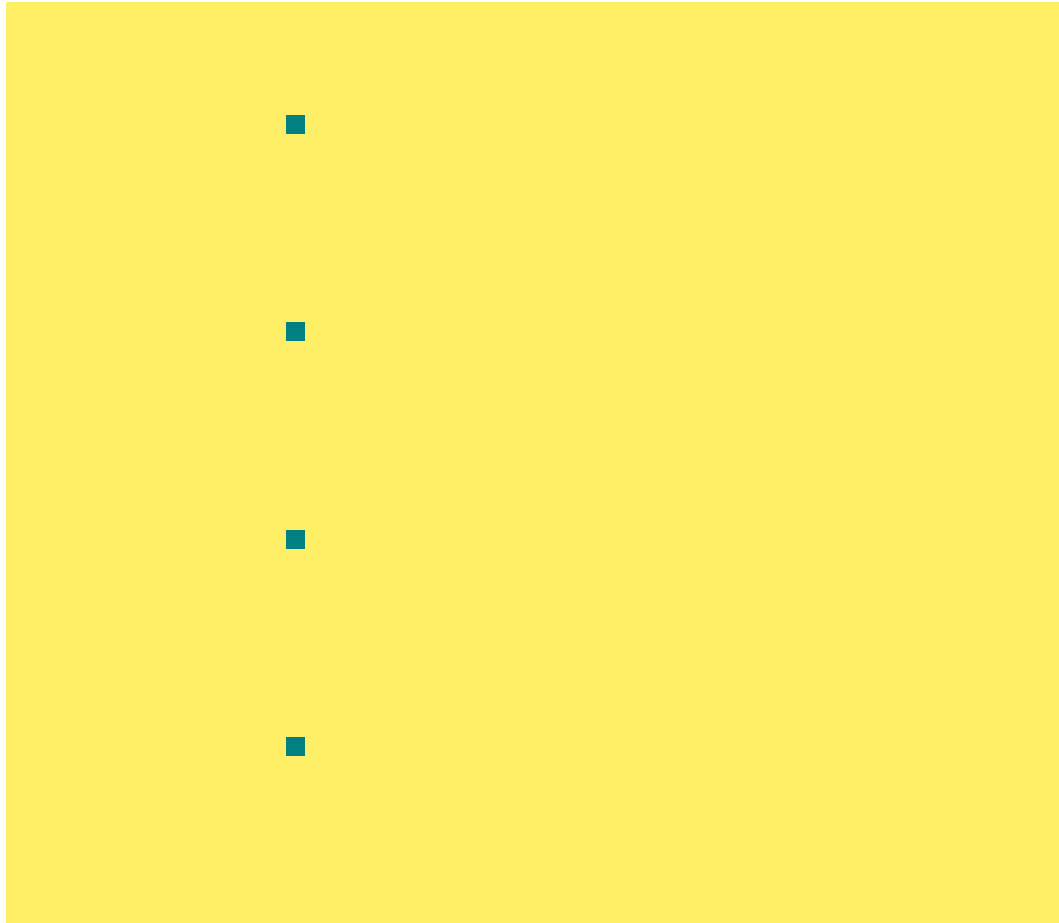
data











+

- Hofstaedter, Goedel, Escher, Bach
- Berger, Geometry I, II
- Eves, ... History of Mathematics
- Jennings, ... Modern Geometry
- Hersch, Mathematical Experiences
+ What is mathematics, really?



B

Y

E nd

