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1968

1973

Bourbaki

*Lineare geometrie*

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976 *Analysis I* I , 1977

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Role

*Analysis II*

1/3

1970

1950 60

New- Math

1963

New- Math

Back

to basic

1980

An Agenda for Action(NCTM 1980)

NCTM 1989

1960

66

67

70

73

1974

90%

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78

Bour baki

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2 Bruner

( 1961)

1980

NCTM

remedial

1999

IEA  
 OECD PISA2003

OECD PISA  
 TIMSS  
 PISA2000

PISA

real world

PISA

TIMSS2003

PISA TIMSS

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③

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dream

challenge the

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- Weierstrass”

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e- business

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( 1905 ) 100

$\triangle ABC$

$C$

$AB$

$H$

$BH = c_1 \quad AH = c_2$

$AB = c \quad BC = a \quad AC = b$

$\triangle CBH \quad \triangle ABC$

$$\frac{a}{c_1} = \frac{c}{a} \quad \triangle$$

$ACH \quad \triangle ABC$

$$\frac{c_2}{b} = \frac{b}{c}$$

$$a^2 = cc_1 \quad b^2 = cc_2$$

$$a^2 + b^2 = c(c_1 + c_2) = c^2$$

5

(DO MATH)

Do MATH

( )

“ ”

activity discussion

$$1 + 2 + 3 + \dots + n$$

$$1, 1+1, 1+1+1, \dots$$

$$n \quad n+1$$

○

$$\frac{n(n+1)}{2}$$

●

$n$

1 ○ ● ● . . . ●

2 ○ ○ ● . . . ●

$$n^2 + n + 41$$

3 ○ ○ ○ ● . . . ●

. . . . .

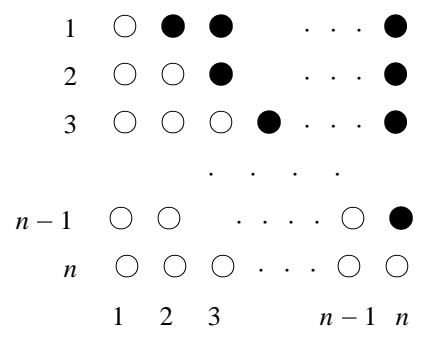
$n$  ○ ○ ○ . . . ○ ●

1 2 3 . . .  $n$   $n+1$

○

$x$   
 $x - n$  ●

$$n^2 - (x - n) = x$$



A

A      A'    A''    A'''

NCTM

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Fermat  
A. Wiles

$$x^n + y^n = z^n \quad (n \geq 3)$$

p

10

(3,5), (5,7)

4

Res=1/2

html ]

[ <http://www.osaka-math.org/journal/seminar.shannon>

RSA

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black box

C++

18

20

05 10 30

IBM  
2010

280

$10^{16}$  10pet a

1000

100

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VLSI

ICOT

20

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I I II

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III

11

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WSawyer ( ): 1943  
G. Pol ya ( ) 1954  
J. S. Bruner ( ) 1963

1965

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1968

1973

NCTM An Agenda for Action NCTM 1980

1985

1986

10 21 1997 )

11 Benbt Ul i n: 1994

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2005

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2001

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2005