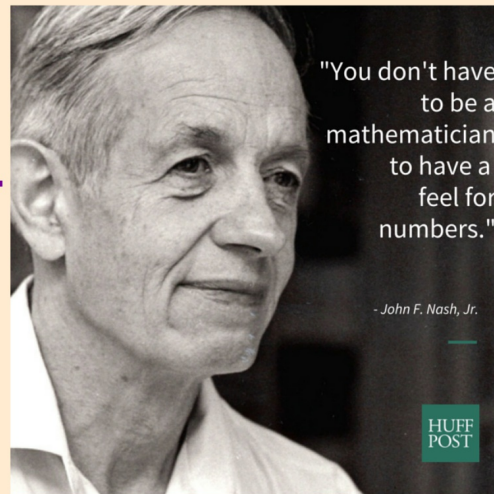


Mathematician Monday:

John Nash

Born in Bluefield, WV.

- Mother was a teacher. Father electrical engineer.
- Fondest young memories of his grandmother playing the piano.



Mathematician Monday:

John Nash

- Bluefield dependent on the existence railroad and coal fields.
- Mr. Nash's family had lots of encyclopedias and books for him to read.



Mathematician Monday:

John Nash

- Fond memory of high school: "I remember succeeding in proving the classic Fermat theorem about an integer multiplied by itself p times, where p is a prime (number)"

(aka. Fermat's Little Theorem)

Mathematician Monday:

Fermat's Little Theorem

- If p is prime and a is a positive integer not divisible by p , then

$$a^{p-1} \equiv 1 \pmod{p}$$

- *Proof*

– Start by listing the first $p - 1$ positive multiples of a :

$$a, 2a, 3a, \dots, (p-1)a$$

Suppose that ra and sa are the same modulo p , then we have

$r \equiv s \pmod{p}$, so the $p-1$ multiples of a above are distinct and nonzero; that is, they must be congruent to $1, 2, 3, \dots, p-1$ in some order. Multiply all these congruences together and we find

$$a \times 2a \times 3a \times \dots \times (p-1)a \equiv 1 \times 2 \times 3 \times \dots \times (p-1) \pmod{p}$$

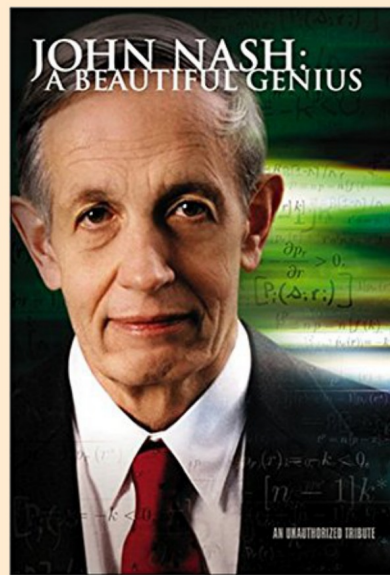
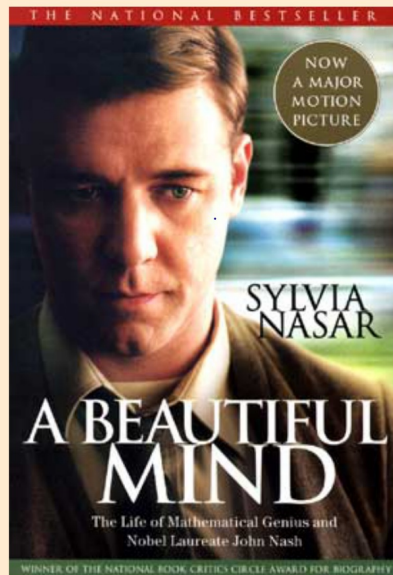
or better, $a^{p-1}(p-1)! \equiv (p-1)! \pmod{p}$. Divide both side by $(p-1)!$ to complete the proof

- *Corollary*

– If p is prime and a is any positive integer, then

$$a^p \equiv a \pmod{p}$$

Mathematician Monday:
John Nash, his adult years...



Mathematician Monday:

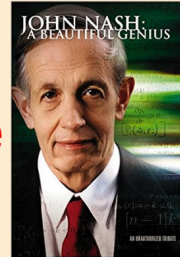
John Nash, his adult years...

Attended:

1) Carnegie (now Carnegie Mellon University)

Earned B.S. and M.S.

2) Offered fellowship at Harvard or Princeton - chose Princeton

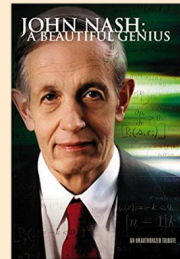


Mathematician Monday:

John Nash, his adult years...

Professor at:

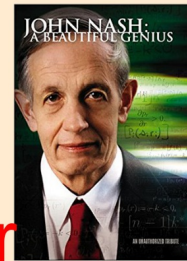
- 1) Princeton (1950 - 1951)
- 2) M.I.T. (1951 - 1959)



Nobel Memorial Prize: (1994)
in Economic Sciences (shared
award with Reinhard Selten
and John Harsanyi.)

Mathematician Monday:

John Nash, his adult years...



- 1959 Nash showed clear signs of mental illness.
- Spent many years at psychiatric hospitals being treated for **paranoid schizophrenia**

Mathematician Monday:

What is **paranoid schizophrenia**?

Schizophrenia is defined as “a chronic mental disorder in which a person loses touch with reality (psychosis).”

Treatment:

It typically requires lifelong treatment with neuroleptics to allow someone to have a relatively stable and normal lifestyle.

Mathematician Monday:

John Nash, his adult years...

After 1970, his condition slowly improved and he returned to academic work by the mid-1980s



1 in 4

adults experiences
mental illness every year.

1 in 17

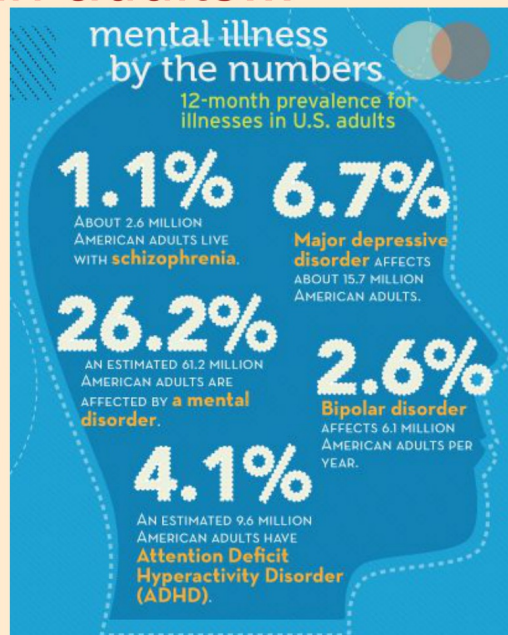
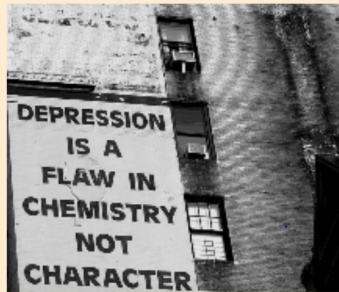
lives with a serious
mental illness.

Via the National Alliance
on Mental Illness



SOCIAL WORK LICENSE MAP
Social Work Licensure Made Simple

Mathematician Monday: Mental Health in adults...



Mathematician Monday:

John Nash, his adult years...

May 23, 2015:

John and wife Alicia were killed in a car crash taking a taxi on New Jersey Turnpike.

Biography: Read more at...

https://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/1994/nash-bio.html

