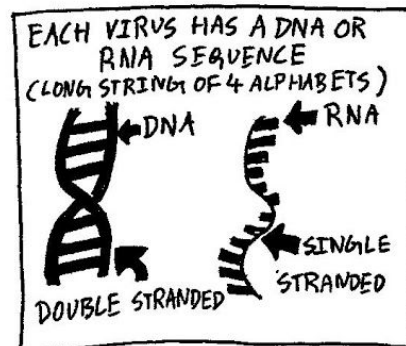
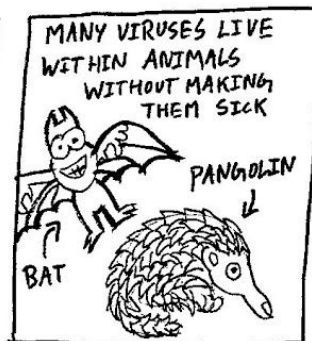
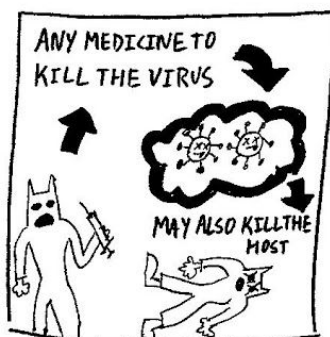
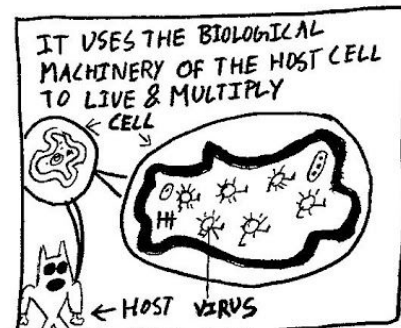
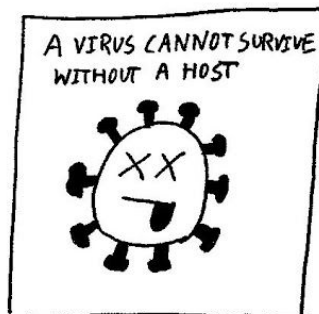
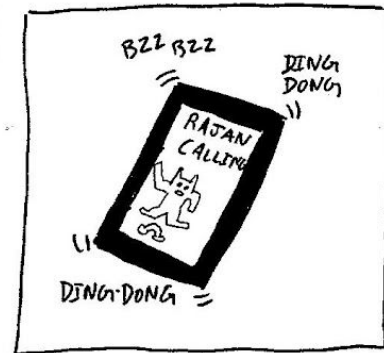
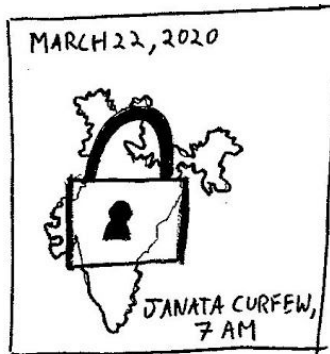
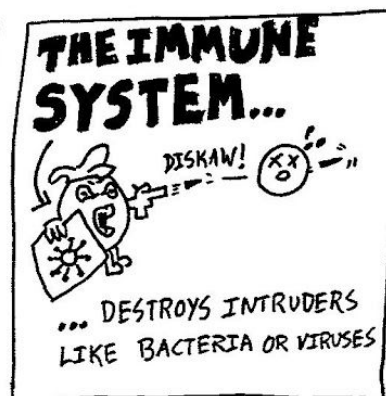
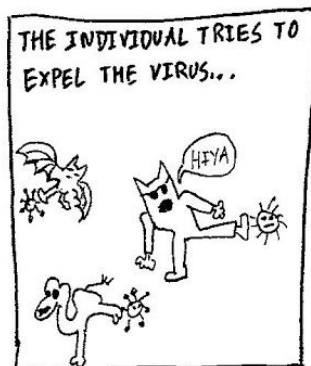
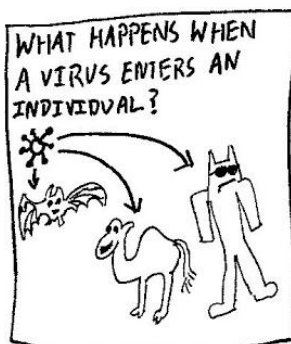
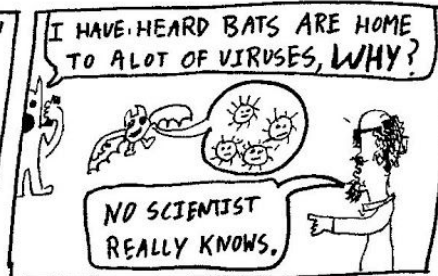
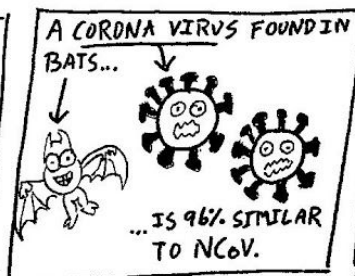
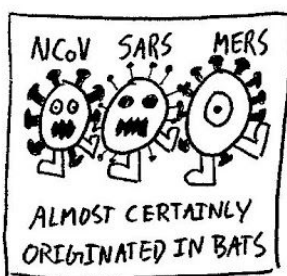
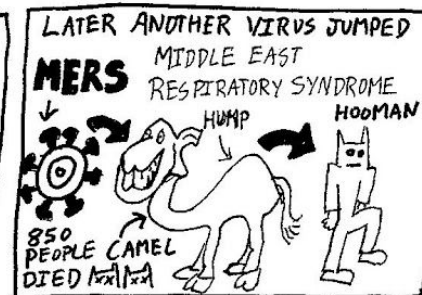
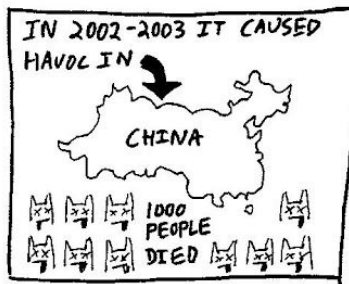
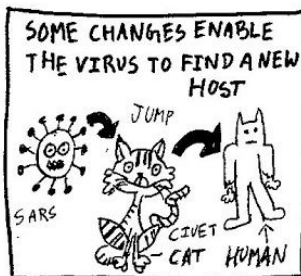
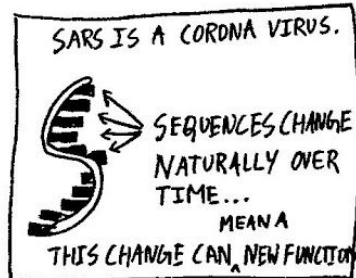
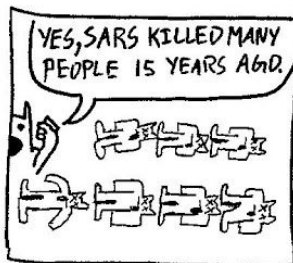
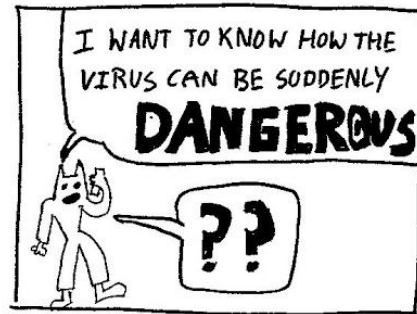
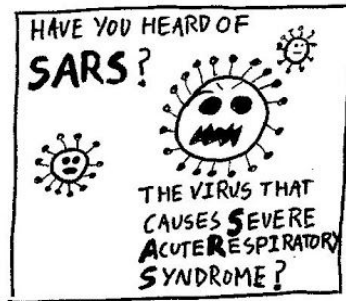
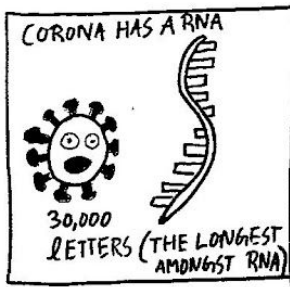


# LOCKDOWN MATH

(WHY WE MUST COMPLY)  
BY PARTHA P MAJUMDER  
PRESIDENT INDIAN ACADEMY  
OF SCIENCE & GROOMEX CONZES






SCIENTISTS BELIEVE BATS DO NOT SHOW IMMUNE RESPONSE AGAINST VIRUSES.

WHICH IS WHY BATS ARE HOME TO MANY TYPES OF VIRUSES


WE STILL DO NOT UNDERSTAND WHY



INFECTIONS SPREAD BY VARIOUS WAYS

NCoV PRIMARILY

LUNGS & AIRWAYS




WHICH GIVES COLD LIKE SYMPTOMS WITH FEVER

SNEEZE DROPLETS (VIRUS) EYES

COUGH YAK NOSE MOUTH

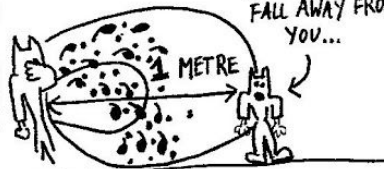
SICK PERSON → HEALTHY PERSON



SOCIAL DISTANCING

DROPLETS WILL FALL AWAY FROM YOU...

1 METRE

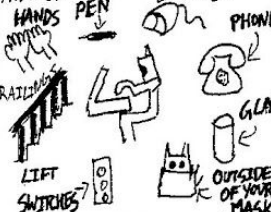


AND ON HANDS

PEN MOUSE PHONE


RATINGS GLASS

LIFT SWITCHES? OUTSIDE OF YOUR MASK



IF YOU TOUCH THOSE THINGS AND YOUR

EYES NOSE OR MOUTH



WASH YOUR HANDS FOR 20 SECONDS AFTER TOUCHING A SUSPECTED SURFACE.

SOAP CAN DESTROY THE VIRUS.



COVER COUGH/SNEEZE WITH TISSUE/KERCHIEF/MASK

USE ELBOW FOR EMERGENCIES



AVOID CONTACT WITH SICK PEOPLE...

PLATE FOOD TOWLS

DO NOT SHARE PERSONAL ITEMS



WHEN NCoV STRUCK IN WUHAN APPROPRIATE PRECAUTIONS WERE NOT TAKEN


CHINA WUHAN

TICK TOCK



THE CHINESE GOVT REALIZED ITS HUGE PROBLEM

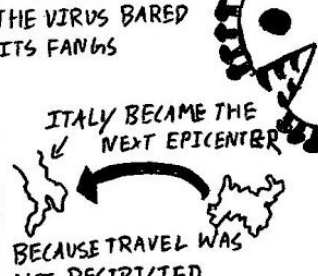
NI HOW MA? SCRATCH SCRATCH



THE VIRUS BARED ITS FANGS

ITALY BECAME THE NEXT EPICENTER


BECAUSE TRAVEL WAS NOT RESTRICTED.



WIDE AND RAPID SPREAD - WHY?

1. SICK PERSON DOES NOT SHOW SYMPTOMS FOR THE FIRST 4 DAYS

THE UNAWARE SICK PERSON MEETS HEALTHY PEOPLE & INFECTS THEM



2. WE TRAVEL A LOT AND DO NOT LIKE RESTRICTIONS

THE MAN WHO? ZE MAN?

FEARING UNPOPULARITY GOVERNMENTS DO NOT IMPOSE RESTRICTIONS



HOW LONG DO WE HAVE TO WAIT?

NO ONE REALLY KNOWS RAJAN

WAIT AND WATCH

BUT WE NEED TO UNDERSTAND HOW THE SPREAD CAN BE CURTAILED...



THEREFORE EARLY RESTRICTIONS ON MOVEMENT AND INTERACTION IS THE BEST. \*

1.2 Billion  
21 DAY LOCKDOWN

OUR STRATEGY SHOULD SERVE AS A MODEL NOW AND FOR THE FUTURE


WITH THE EXCEPTION OF ESSENTIAL SERVICES



MANY OF US ARE MAD ABOUT THE STRATEGY ADOPTED BY THE INDIAN GOVT...

OF

**CURBING  
MOVEMENT &  
SOCIAL INTERACTION**



THE ALTERNATIVE IS TO WITNESS

**LARGER  
THAN  
WUHAN  
&  
ITALY** HIGH


OUR POPULATION DENSITY IS,

RAJAN, LET ME SHOW HOW INFECTIONS CAN INCREASE RAPIDLY

DEATHS w/ RESTRICTIONS

DEATHS WITHOUT RESTRICTIONS

UNLESS RESTRICTIONS/SOCIAL DISTANCING ARE FOLLOWED



YOU CANNOT GET SICK UNLESS ONE CONTACTS SICK INDIVIDUALS.

THIS IS FINE

ATCHO

KOFF KOFF

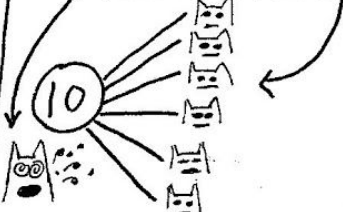
CONTACT IS THE ONLY MEANS OF SPREADING w/ SURFACES WITH VIRUS ON IT



DAY 1 10 SICK PEOPLE CONTACT 6 UNINFECTED PEOPLE

10

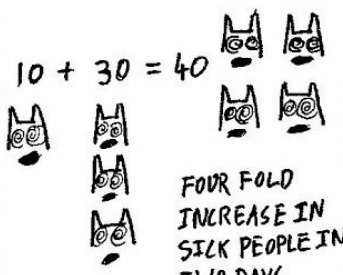
SAY HALF OF THESE 60 GET SICK



DAY 2 THE NUMBER OF INFECTED RISES.

10 + 30 = 40

FOUR FOLD INCREASE IN SICK PEOPLE IN TWO DAYS

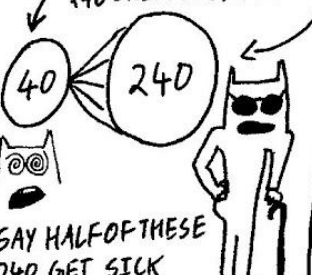


DAY 3 40 SICK PEOPLE CONTACT 240 UNINFECTED PEOPLE

40

240

SAY HALF OF THESE 240 GET SICK




120 + 40 =

**160**

NUMBER OF INFECTED ROSE FROM 10 TO 160 IN THREE DAYS

**16 FOLD INCREASE IN 3 DAYS**



THIS IS AN APPROXIMATE FEW OF THE OLD CASES WILL DIE UNFORTUNATELY.

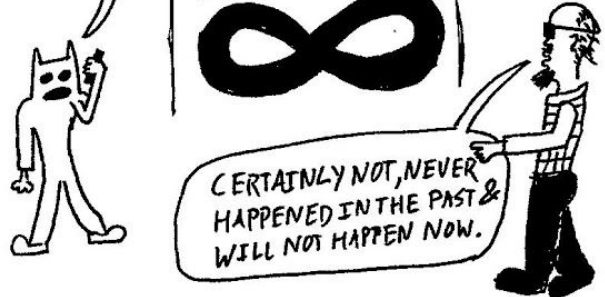
35 OUT OF 1000 ARE DYING AFTER A FEW WEEKS OF SUFFERING FROM AN INFECTION.

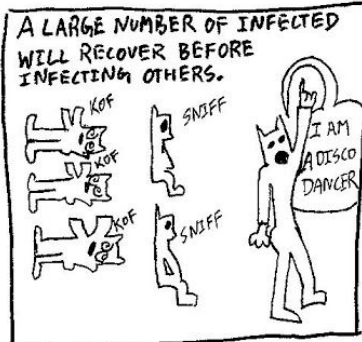
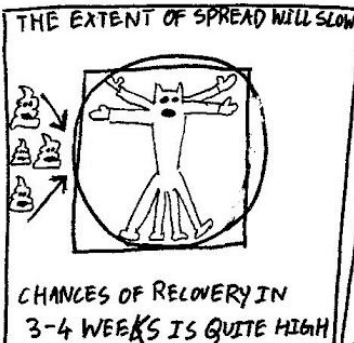
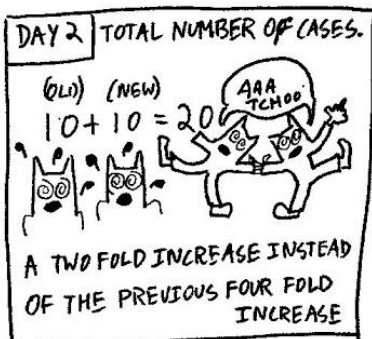
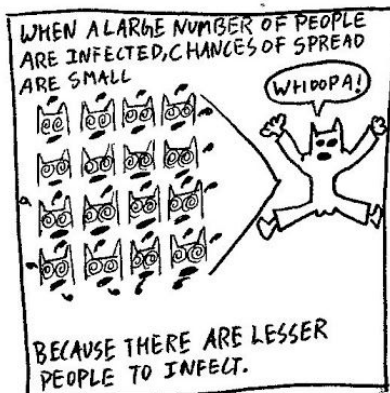


BUT CAN THIS INCREASE FROM 10 TO 40 TO 160 GO ON FOREVER?

**∞**

CERTAINLY NOT, NEVER HAPPENED IN THE PAST & WILL NOT HAPPEN NOW.





Credits:

Lockdown Math was written by Professor Partha P. Majumder,  
President Indian Academy of Science.

[https://www.ias.ac.in/describe/fellow/Majumder,\\_Prof.\\_Partha\\_Pratin](https://www.ias.ac.in/describe/fellow/Majumder,_Prof._Partha_Pratin)  
President Bengal Academy of Science & Technology.

Story originally appeared in The Telegraph.

<https://www.telegraphindia.com/india/coronavirus-lockdown-maths-why-we-must-comply/cid/1758884>

Thank you Subhankar Biswas, Indian Academy of Sciences for the article.

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