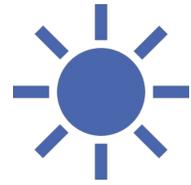


Good Evening Worthy viewers

Benny Varghese
PGT Maths
JNV Kottayam
Kerala

(NATIONAL ICT AWARDEE)

foreword



At the outset I am thankful to
CIET NCERT the whole team
for giving me this opportunity
to throw some light on my
Journey to National ICT Award
in 2016

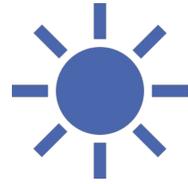
Also I am grateful to Shri. J ANIL sir
The Principal JNV Kottayam and all the
officials of my Organization NVS

In my humble opinion >>

today's carry home message >>

- Be in touch with computer and practise regularly to learn computer
- And self learning plays a pivotal role here
- I started to learn GeoGebra 15 years back by downloading its Manual and with the help of exemplar files/applets
- Practise new things else you as a teacher will be outdated.
- Remember >> No technology will replace a teacher but a teacher who uses technology may replace one who doesn't use it.
- As remarked in NEP 2020 >> Technology gives wings to education

Starting point



During 1990-1992

I was a PG student – M.Sc. Mathematics

I opted **Computer Programming** as

one of the two electives for M.Sc Maths

(The other one was probability theory)

I had opportunity to learn

COBOL , BASIC and FORTRAN languages

during these two years of my M.Sc course

Perchance this was the starting point of
my ICT journey

PC that time

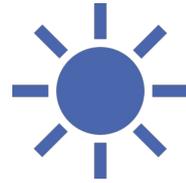


Those diskless Computers were using
DOS- Disk Operating System

We were using a floppy disk to start computer

Black grey screen with no icons.....
Perchance todays generation may not be in a
position to
even imagine those things...

GW Basic Language



```
10 CLS
20 FOR B=2 TO 40 STEP 2
30 PRINT B
40 NEXT B
50 END
```

The screenshot shows a window titled "E:\GW BASI~1.5\GW BASIC.EXE". The main area displays the output of the program, which is a list of even numbers from 2 to 40, one per line. Below the list, the text "Ok" is displayed. At the bottom of the window, there is a menu bar with the following options: "1LIST", "2RUN←", "3LOAD", "4SAVE", "5CONT←", "6. "LPT" 2", and "7".

```
E:\GW BASI~1.5\GW BASIC.EXE
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
Ok
1LIST 2RUN← 3LOAD 4SAVE 5CONT← 6. "LPT" 2 7
```

Another 4 years

During 1993-1995

I was teaching Maths in a private college
(Queen Mothers College Alwaye, Kerala)

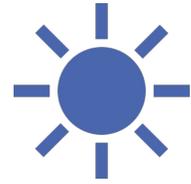
1995-1996

I was a B.Ed student.

During these 4 years I kept me a little bit
away from computers.....

And the evolution in computer world
was of exponential growth during this period
And the operating system windows 95 came
into being –a radical change for OS- highly
user friendly OSetc

my job



1997

On 8th Sept 1997 I joined NVS as PGT Maths

And I got ample opportunity to be in touch with computers – acquainted with MS office

Some computers were there in my school

After three four years I was given the

responsibility of Resource person for

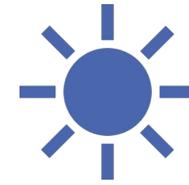
various Training programmes related to

Maths and I needed something beyond

Texts for the participant teachers...

I started using PPT presentations

Excel for results compilations and GeoGebra ver 4.



My first PC in 2003

Infobeats systems
 • Computer Peripherals
 • WINDOWS-NT, LAN & Networking
 • Software Consultancy
 • Computer Maintenance
 • Rental PCs
 56/2, Ganesh Peth, Near Shivam Dada Talim,
 Pune-2 ☎ : 8333726 E-mail : infobeats.sys@usa.net

To: Benny Varghese
Jankar Navdeep Vichayal
Pringle Jai-rup Chokan

INVOICE /DELIVERY CHALLAN

Your P.O. No. : _____ Date: 30/8/03 INVOICE NO.: **148**
 Delivery Challan No. : _____ Date: _____ DATE 30/8/03
 Attn. : _____

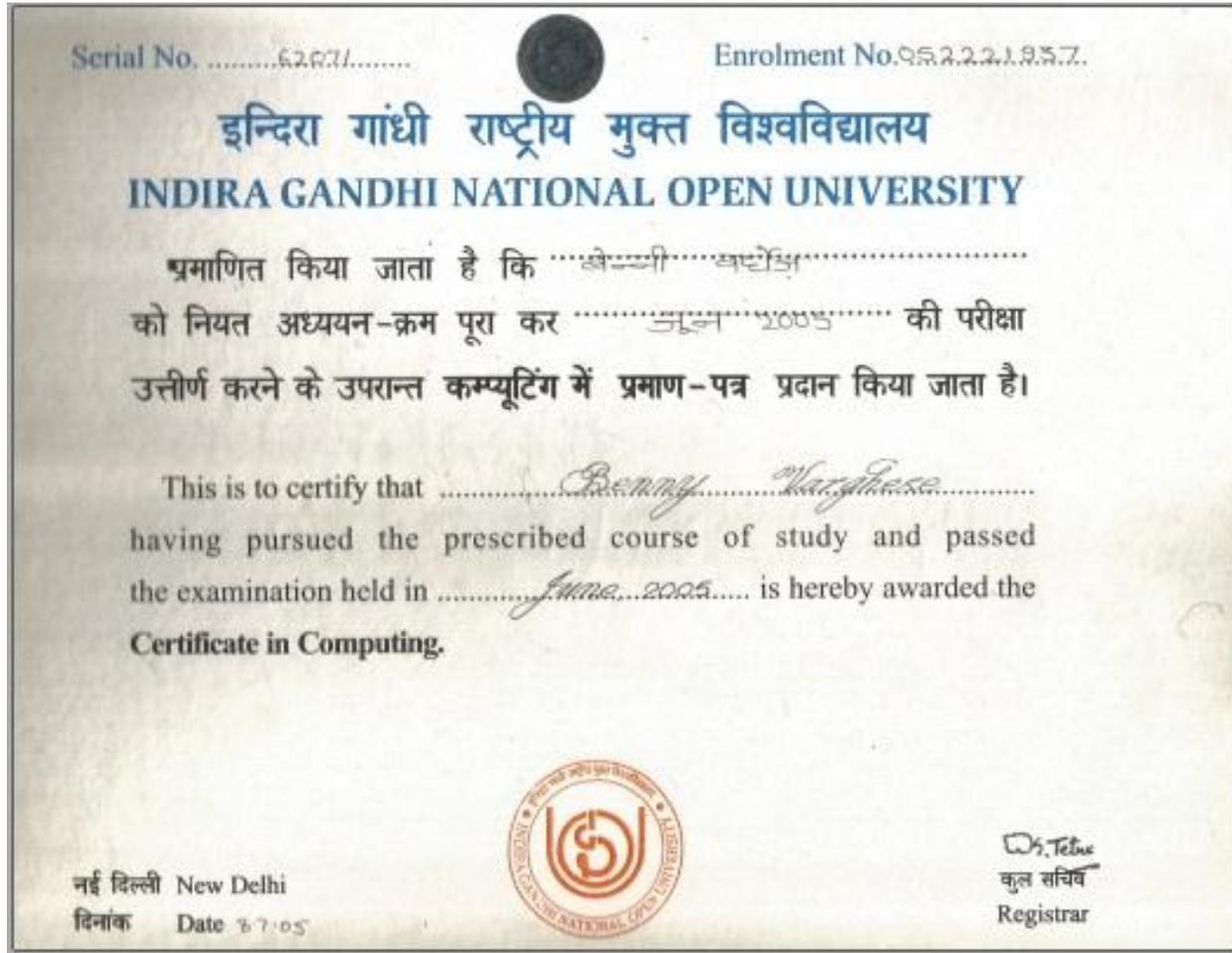
| SR.No. | PARTICULARS | QTY. | RATE | AMOUNT |
|--|-------------------------------------|------|-------|----------|
| 1) | Pentium (R) 4. 2.4GH CPU (original) | | | |
| 2) | Intel 845 chipset board. | | | |
| 3) | 60 GB Harddisk (samany) | | | |
| 4) | 128 DDR Ram | 01. | | 63,000/- |
| 5) | 17 LG monitor (stack) | | | |
| 6) | 144 MB FDD | | | |
| 7) | 52X writer L.C. | | | |
| 8) | 830 w subwoofer system. | | | |
| 9) | Headphone & mic | | | |
| 10) | Keyboard mm. | | | |
| 11) | Mouse scroll | | | |
| 12) | 56 Kbps modem. | | | |
| 13) | microtek ups. | | | 2700/- |
| Received all amount by cash. (35700/-) | | | | |
| Rs.in words | | | TOTAL | 55,700/- |

1 / 1

2003

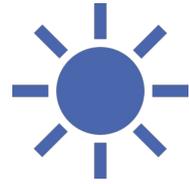
I bought my first PC and started trying several Projects

Beginning of the Day



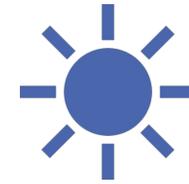
In 2005
I pursued the 6 months course
CIC
-Certificate in Computing and
passed the exam in June 2005
and joined MCA in IGNOU.
After one year I left the plan to
pursue MCA
as it was not convenient for me
to do it along with my job

Some of my projects



1. C programme -for Linear equation solving
2. Student Performance analysis-excel
3. Mess management –excel
4. Inter house Quiz programme-VB
5. GeoGebra applets
6. Maths site web portal
7. Geometric Constructions by Robocompass
8. YouTube Lessons

To solve LE -c programme



```
BENTECH Presents...

Solving a LINEAR EQUATION in TWO Variables
An equation of the form ax+by+c=0 or ax+by=d
where a and b are non zeros is called
a LINEAR EQUATION in TWO Variables
Now to solve such equations
we consider the first form
If you take the second form plz enter c=-d, that's all!

For the convenience of plotting solutions on Graph Sheet
we'll consider only integer values for x and y

Enter the value of a= 1
Enter the value of b= 2
Enter the value of c= 3

Your Equation is :      (1)x+(2)y+(3)=0

                -(1x + 3)
where y= -----
                2

Press 1 or 2 as per your choice

1. Yes, Let me try first !

2. Excuse me! I would like to get solutions !
```

```
1. Yes, Let me try first !

2. Excuse me! I would like to get solutions !

2

Plz specify range of x in which you want solutions
Example:Values of x from (-5) to 7.
Here upper range of x is 7 and lower range is (-5)

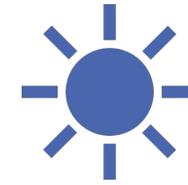
Input Upper Range for x=10
Input Lower Range for x=-10

Solutions are:

x=-9    y=3
x=-7    y=2
x=-5    y=1
x=-3    y=0
x=-1    y=-1
x=1     y=-2
x=3     y=-3
x=5     y=-4
x=7     y=-5
x=9     y=-6

Thank U for using BENTECH...-Benny Varghese
```

Performance Analysis -using Excel



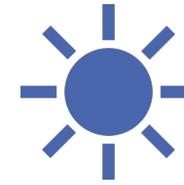
| STUDENT'S PERFORMANCE ANALYSIS..... a bentech presentation | | | | | | | | | | | | | | | | |
|--|-----|------|---------|------|------|---------|------|------|--------|-----------------|------|----|------|----|------|----|
| CLASS >> | 7A | | S.No >> | 20 | | R.No >> | 2829 | | NAME > | AISHWARYA MOHAN | | | | | | |
| | FA1 | FA2 | SA1 | FA3 | FA4 | SA2 | | | | | | | | | | |
| ENG | 75 | 80 | 79 | 80 | 88 | 90 | 76 | 80 | 78 | 80 | E20 | 80 | E20 | 80 | E20 | 80 |
| HIN | 75 | 80 | 70 | 80 | 87 | 90 | 76 | 80 | 68 | 80 | H20 | 80 | H20 | 80 | H20 | 80 |
| MAL | 75 | 80 | 79 | 80 | 82 | 90 | 77 | 80 | 77 | 80 | M20 | 80 | M20 | 80 | M20 | 80 |
| MAT | 74 | 80 | 78 | 80 | 82 | 90 | 72 | 80 | 75 | 80 | MT20 | 80 | MT20 | 80 | MT20 | 80 |
| SCI | 78 | 80 | 74 | 80 | 84 | 90 | 72 | 80 | 79 | 80 | S20 | 80 | S20 | 80 | S20 | 80 |
| S.Sc | 74 | 80 | 67 | 80 | 83 | 90 | 73 | 80 | 77 | 80 | SS20 | 80 | SS20 | 80 | SS20 | 80 |
| TOTAL | 450 | 447 | 506 | 446 | 454 | | | | | | | | | | | |
| % | 94 | 93.1 | 94 | 92.9 | 94.6 | | | | | | | | | | | |
| RANK | 2 | 12 | 6 | 5 | 5 | #N/A | #N/A | #N/A | | | | | | | | |

First of all plz select CLASS using the drop down list
Then select the name from the dropdown list or type in the S.No and press ENTER

Progress Bar

| Category | Value |
|----------|-------|
| FA1 | 93.8 |
| FA2 | 93.1 |
| SA1 | 93.7 |
| FA3 | 92.9 |
| FA4 | 94.6 |
| SA2 | 0 |

Performance Analysis -using Excel



STUDENT'S PERFORMANCE ANALYSIS..... a bentech presentation

| CLASS >> | 7A | | S.No >> | | 20 | | R.No >> | | 2829 | | NAME > | | AISHWARYA MOHAN |
|----------|-----|------|---------|------|------|------|---------|----|------|----|--------|----|-----------------|
| | FA1 | FA2 | SA1 | FA3 | FA4 | SA2 | | | | | | | |
| ENG | 75 | 80 | 79 | 80 | 88 | 90 | 76 | 80 | 78 | 80 | E20 | 80 | E20 |
| HIN | 75 | 80 | 70 | 80 | 87 | 90 | 76 | 80 | 68 | 80 | H20 | 80 | H20 |
| MAL | 75 | 80 | 79 | 80 | 82 | 90 | 77 | 80 | 77 | 80 | M20 | 80 | M20 |
| MAT | 74 | 80 | 78 | 80 | 82 | 90 | 72 | 80 | 75 | 80 | MT20 | 80 | MT20 |
| SCI | 78 | 80 | 74 | 80 | 84 | 90 | 72 | 80 | 79 | 80 | S20 | 80 | S20 |
| S.Sc | 74 | 80 | 67 | 80 | 83 | 90 | 73 | 80 | 77 | 80 | SS20 | 80 | SS20 |
| TOTAL | 450 | 447 | 506 | 446 | 454 | | | | | | | | |
| % | 94 | 93.1 | 94 | 92.9 | 94.6 | | | | | | | | |
| RANK | 2 | 12 | 6 | 5 | 5 | #N/A | #N/A | | | | | | |

First of all plz select CLASS using the drop down list
Then select the name from the dropdown list or type in the S.No

Progress Bar

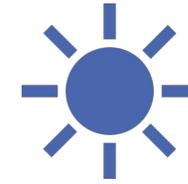
| Category | Value |
|----------|-------|
| FA1 | 93.8 |
| FA2 | 93.1 |
| SA1 | 93.7 |
| FA3 | 92.9 |
| FA4 | 94.6 |
| SA2 | 0 |

READY

Search the web and Windows

12:40 PM
3/17/2022

Performance Analysis -using Excel



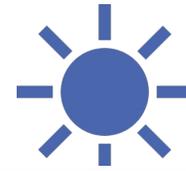
| STUDENT'S PERFORMANCE ANALYSIS..... a bentech presentation | | | | | | | | | | | | | | |
|--|-----|---------|-----|---------|------|--------|-----------------|------|------|----|------|----|------|----|
| CLASS >> | 7A | S.No >> | 20 | R.No >> | 2829 | NAME > | AISHWARYA MOHAN | | | | | | | |
| | 6A | SA1 | FA3 | FA4 | SA2 | | | | | | | | | |
| ENG | 7A | 80 | 88 | 90 | 76 | 80 | 78 | 80 | E20 | 80 | E20 | 80 | E20 | 80 |
| HIN | 8A | 80 | 87 | 90 | 76 | 80 | 68 | 80 | H20 | 80 | H20 | 80 | H20 | 80 |
| MAL | 9A | 80 | 82 | 90 | 77 | 80 | 77 | 80 | M20 | 80 | M20 | 80 | M20 | 80 |
| MAT | 10A | 80 | 82 | 90 | 72 | 80 | 75 | 80 | MT20 | 80 | MT20 | 80 | MT20 | 80 |
| SCI | 11A | 80 | 84 | 90 | 72 | 80 | 79 | 80 | S20 | 80 | S20 | 80 | S20 | 80 |
| S.Sc | 12A | 80 | 83 | 90 | 73 | 80 | 77 | 80 | SS20 | 80 | SS20 | 80 | SS20 | 80 |
| | 12B | | | | | | | | | | | | | |
| TOTAL | 450 | 447 | 506 | 446 | 454 | | | | | | | | | |
| % | 94 | 93.1 | 94 | 92.9 | 94.6 | | | | | | | | | |
| RANK | 2 | 12 | 6 | 5 | 5 | #N/A | #N/A | #N/A | | | | | | |

First of all plz select CLASS using the drop down list
Then select the name from the dropdown list or type in the S.No and press ENTER

Progress Bar

| Category | Value |
|----------|-------|
| FA1 | 93.8 |
| FA2 | 93.1 |
| SA1 | 93.7 |
| FA3 | 92.9 |
| FA4 | 94.6 |
| SA2 | 0 |

QUIZ PROGRAMME -VB



Bentech presents..... QUIZ

BENTECH presents...

Identify the Mathematician.....

| S C O R E B O A R D | | | | |
|---------------------|-----------|------------|------------|------------|
| • ARAVALI | • NILGIRI | • SHIWALIK | • UDAIGIRI | • AUDIENCE |
| 5 | 0 | 0 | 0 | 0 |

WRONG

START RESET

0 0 0

2nd ROUND > Q-1

DATE >> 28-12-2016

6

Elaboration

EUCLID

FIBONACCI

FERMAT

ARYABHATTA

SUBMIT

PREV NEXT

18:22:01

<< Go to



Windows taskbar: 18:22, 28-12-2016

QUIZ PROGRAMME -VB



benetech presents..... QUIZ

MATHS QUIZ

In figure, Circles are concentric and $AB=14$ cm. Taking $\frac{22}{7}$ as the value of Pi, the area between the circles (Shaded Area) is...sq.cm

| SCORE BOARD | | | | |
|-------------|-----------|------------|------------|------------|
| ● ARAVALI | ● NILGIRI | ● SHIWALIK | ● UDAIGIRI | ● AUDIENCE |
| 5 | 0 | 0 | 0 | 2 |

154
145
308
290

SUBMIT

PREV NEXT

18:26:31

<< Go to

A diagram showing two concentric circles. The region between the two circles is shaded in purple. A horizontal line segment labeled 'A' and 'B' at its ends passes through the center of the circles, representing the diameter of the outer circle. The length of this diameter is given as 14 cm.

CONGRATS !

START RESET

0 0 0

5th ROUND > Q-4

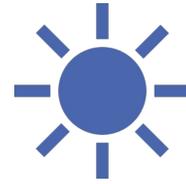
DATE >> 28-12-2016

24

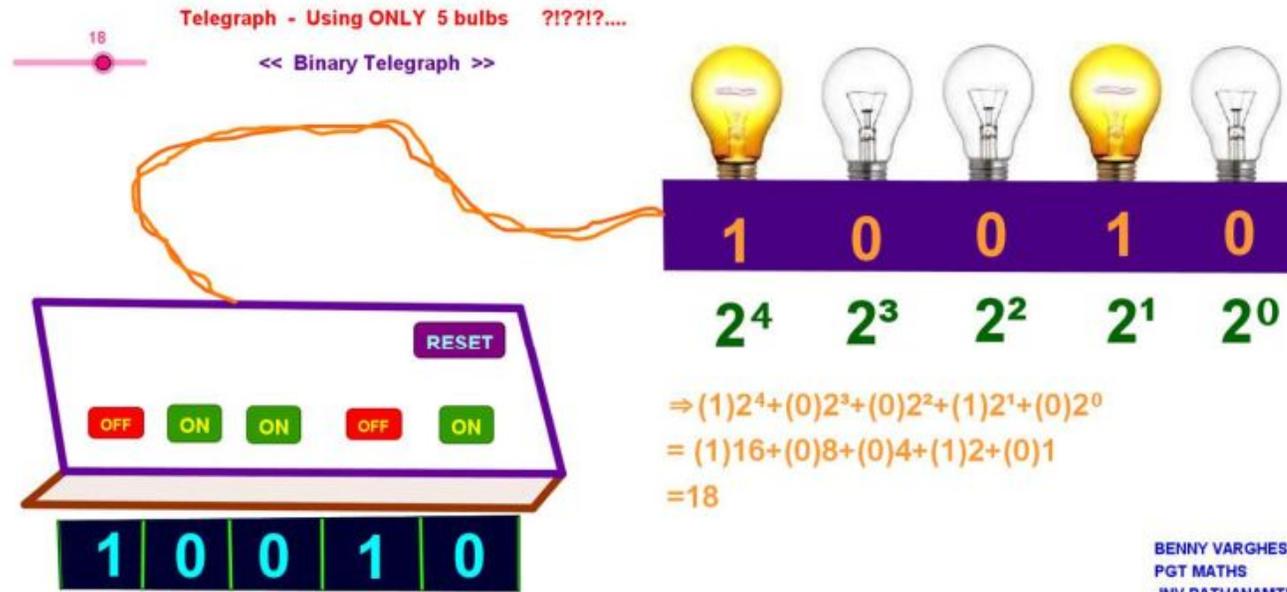
Elaboration

The Windows taskbar at the bottom of the screen, showing icons for Internet Explorer, File Explorer, Microsoft Word, and other applications.

Binary Telegraph

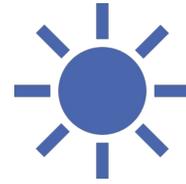


Binary Telegraph (to go Beyond Text Book)



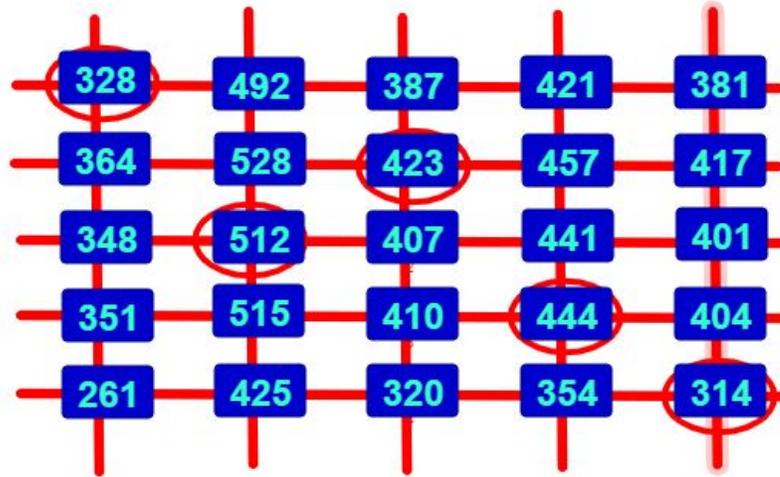
BENNY VARGHESE
PGT MATHS
JNV PATHANAMTHITTA

Happy New Year



A bentech Presentation...

Mathmagic for 2021 ?!



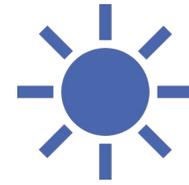
RESTART

$$\begin{array}{r} 328 + \\ 512 \\ 423 \\ 444 \\ 314 \\ \hline 2021 \end{array}$$

SUM >>

Click any number .The concerned row and column elements get cancelled by a red line
Click another non cancelled number and carry out the process untill you get five numbers. For your surprise, their sum will always be???

Function Machine

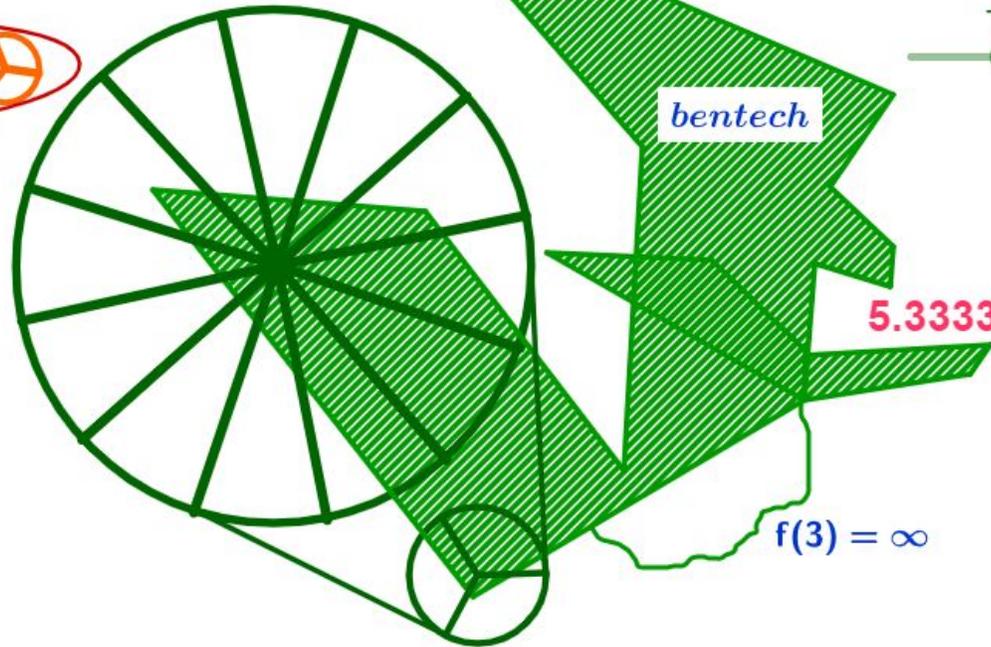


3 0 5
reset reset reset

FUNCTION MACHINE (for 11th Class) AIM How to Proceed

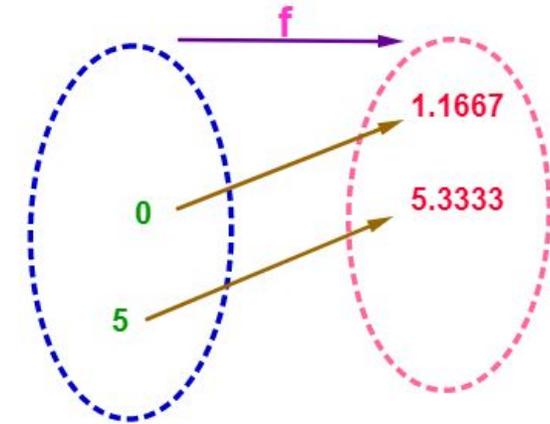
$$f(x) = \frac{x^2 + 7}{x^2 - 5x + 6}$$

To change function



Start Stop

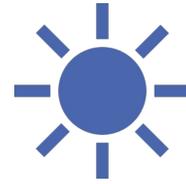
benny varghese
pgt mathematics
jnv pathanamthitta



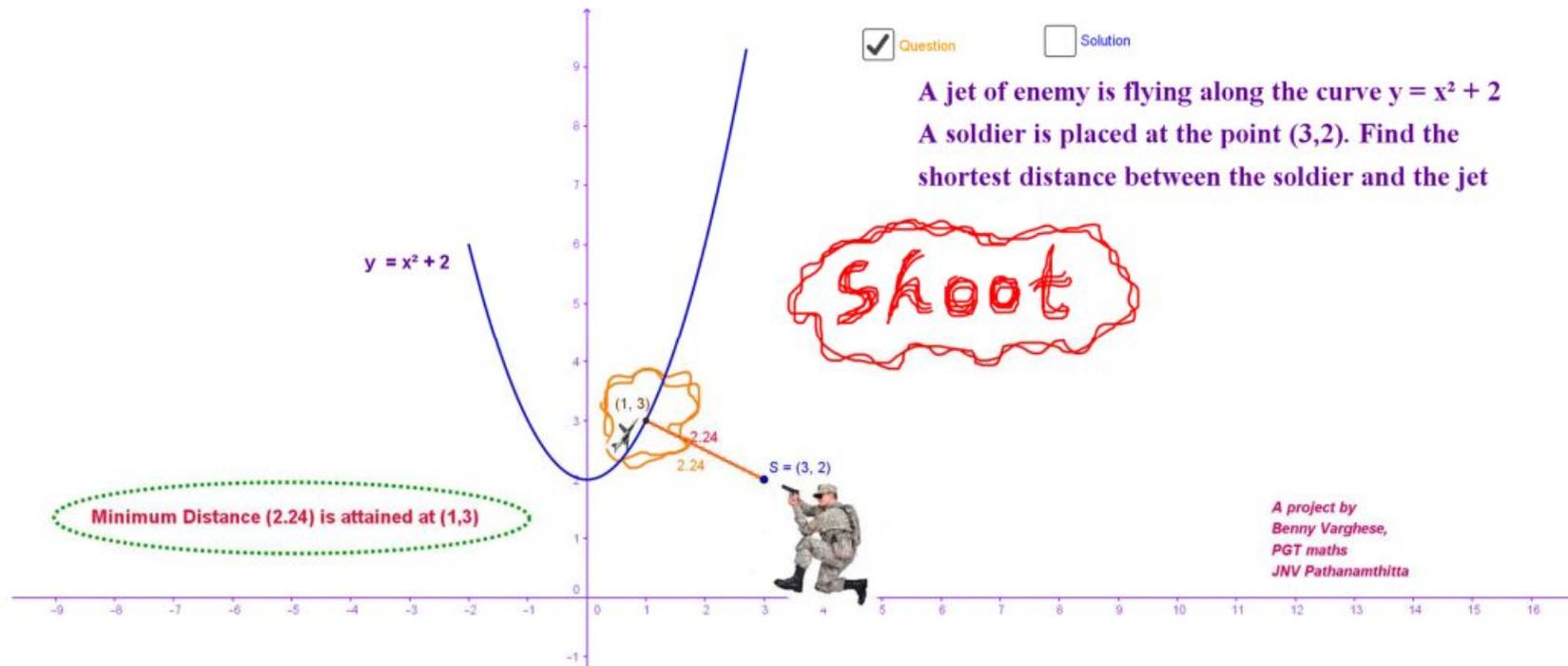
$f(0) = 1.1667$

$f(5) = 5.3333$

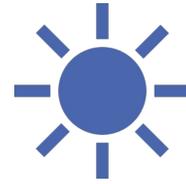
Minimum distance



Gun Point Maxima and Minima >>>



Conic Sections

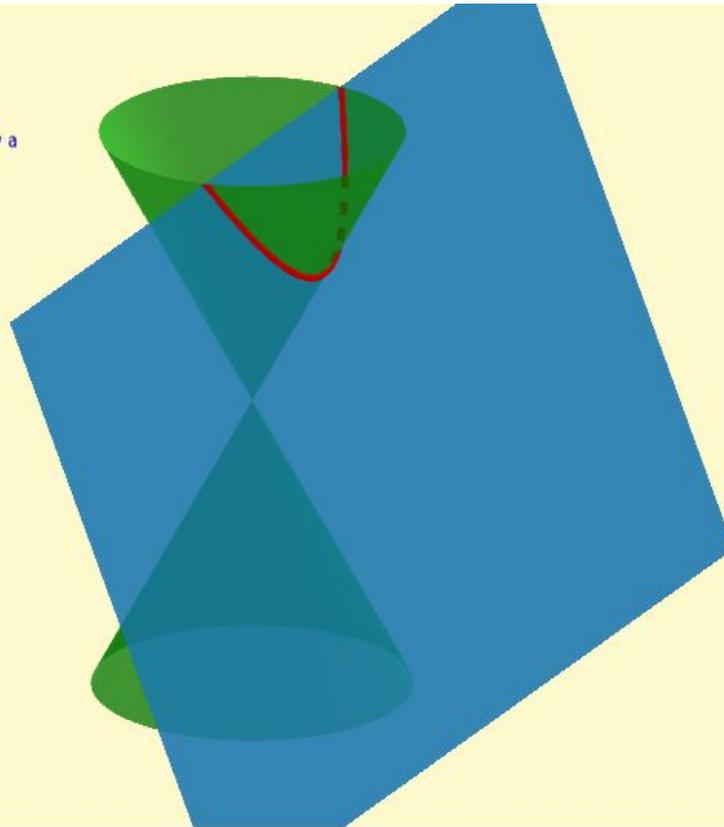


11th Class CONIC SECTIONS

AIM: To get various conics by intersecting a double cone by a plane.

How to Proceed:

Use sliders given on the right side to change the size of the double cone, to move the plane or to tilt the plane



a project by
Benny Varghese
PGT Maths JNV PTA

A green control panel for the simulation. It features a refresh icon at the top right. Below it are three sliders: 'Change Cone' with a slider knob in the middle, 'Move Plane' with a slider knob on the right, and 'Tilt Plane' with a slider knob and the text $\gamma = 158^\circ$ above it. At the bottom of the panel are two buttons: 'Spin' and 'Stop Spin'. A full-screen icon is located at the bottom right corner of the panel.

Change Cone

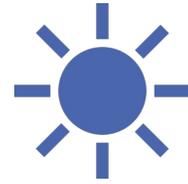
Move Plane

Tilt Plane
 $\gamma = 158^\circ$

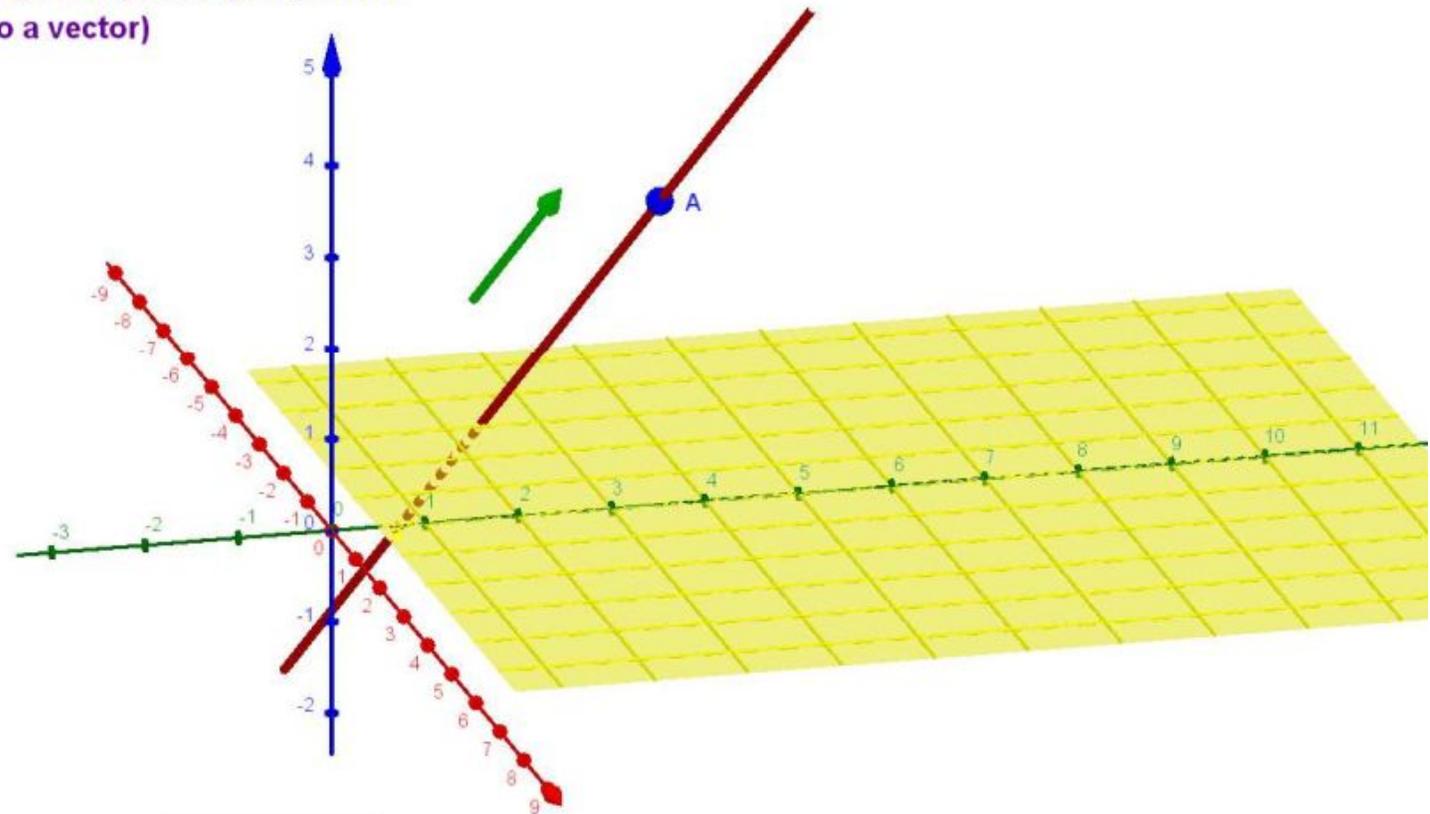
Spin

Stop Spin

Line in space



A Bentech Presentation...
Line in Space (passing through a point A
and parallel to a vector)



Skew Lines



12 Three Dimensional Geometry
Skew Lines and Shortest Distance between them

$\vec{r} = \vec{a}_2 + \mu \vec{b}_2$

$\vec{AB} = \vec{a}_2 - \vec{a}_1$

$\vec{r} = \vec{a}_1 + \lambda \vec{b}_1$

$\vec{b}_1 \times \vec{b}_2$

\vec{b}_1

\vec{b}_2

Use mouse pointer to have animations
Drag H and J to move vectors
You may drag D also. Use check boxes for parallel planes

Shortest Distance between two skew lines is the projection of the vector AB on S (yellow dotted line)

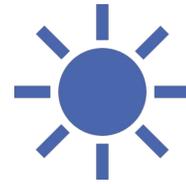
Plane one

Plane Two

Start Animation

Stop

Plotting Coordinates



Class 9-Coordinate Geometry
Plotting points

Aim: How to proceed

Click on the button "Sample" and then "Start Animation".
After getting practised, click "Stop" and "Refresh" buttons
Now drag points A,B,C,D,E to its correct position until you get "correct" message.

Click 4 New Coordinates

A(1, 2)
B(-2, 2)
C(0, -3)
D(4, -3)
E(0, 0)

Sample

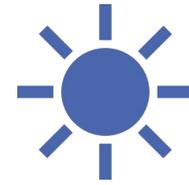
(3, -1)

F = (3, -1)

Start Animation Stop Refresh

-BENNY VARGHESE
PGT MATHEMATICS
JNV PATHANAMTHITTA
KERALA-686511

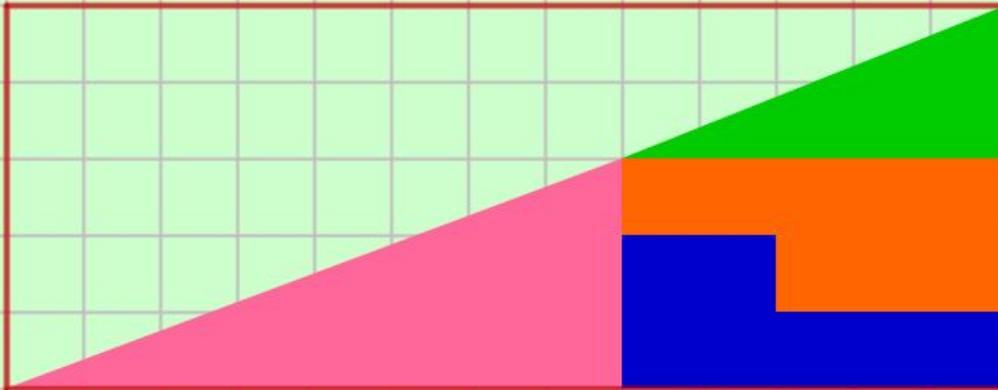
Missing Square !



Class 10 : Geometry >> Missing Square !!! a Mathmagic !

Plz click the Strat Animation Button and observe what happens !!! Can you find the reason for that missing square???

In case that you are at your wit's end plz click the "explanation "button



Start Animation

Stop

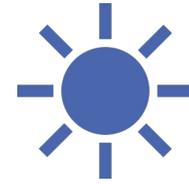
Refresh

Explanation



Benny Varghese
PGT Mathematics
JNV Pathanamthitta
Kerala-686511

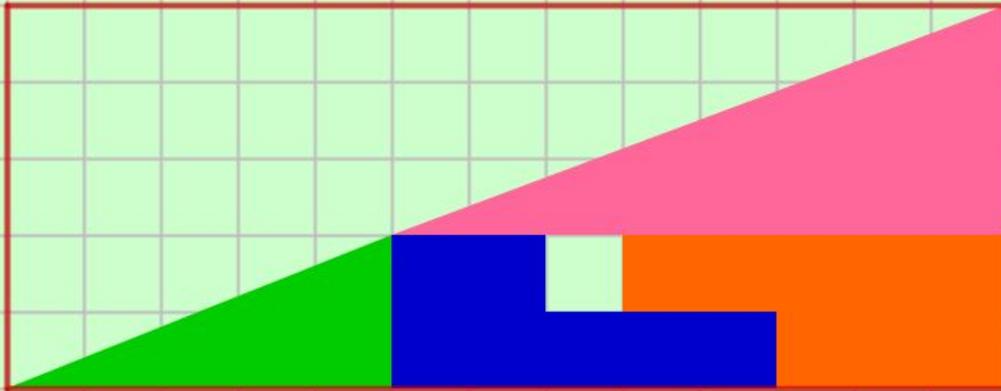
Missing Square !



Class 10 : Geometry >> Missing Square !!! a Mathmagic !

Plz click the Start Animation Button and observe what happens !!! Can you find the reason for that missing square???

In case that you are at your wit's end plz click the "explanation" button



Start Animation

Stop

Refresh

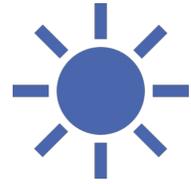
Explanation



Benny Varghese
PGT Mathematics
JNV Pathanamthitta
Kerala-686511



Magic Sum



4568



Your First Number (4 digits)

7825

Your Second Number (4 Digits)

2174

My First Number

3265

Your third Number (4 Digits)

6734

My Second Number

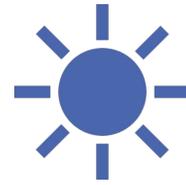


24566

We are going to add 5 numbers each having FOUR digits
Three NUMBERS will be yours and only two mine
Check the boxes to enter your numbers
And I give you permission to check the boxes for my numbers also
Isn't it interesting ???
Just after entering your FIRST number the sum of all the FIVE numbers will be given even before other FOUR numbers are decided"
Enjoy



Ramanujan square for any DOB



RAMANUJAN MAGIC SQUARE for your DOB

SUM = 139

| | | | |
|----|----|----|----|
| 22 | 12 | 18 | 87 |
| 88 | 17 | 9 | 25 |
| 10 | 24 | 89 | 16 |
| 19 | 86 | 23 | 11 |

Date DD... 22

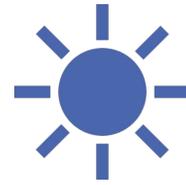
Month MM... 12

YEAR YYYY... 1887



Enter your DOB in the boxes
and move the slider button to see
the mysteries packed with your DOB
-Bentech

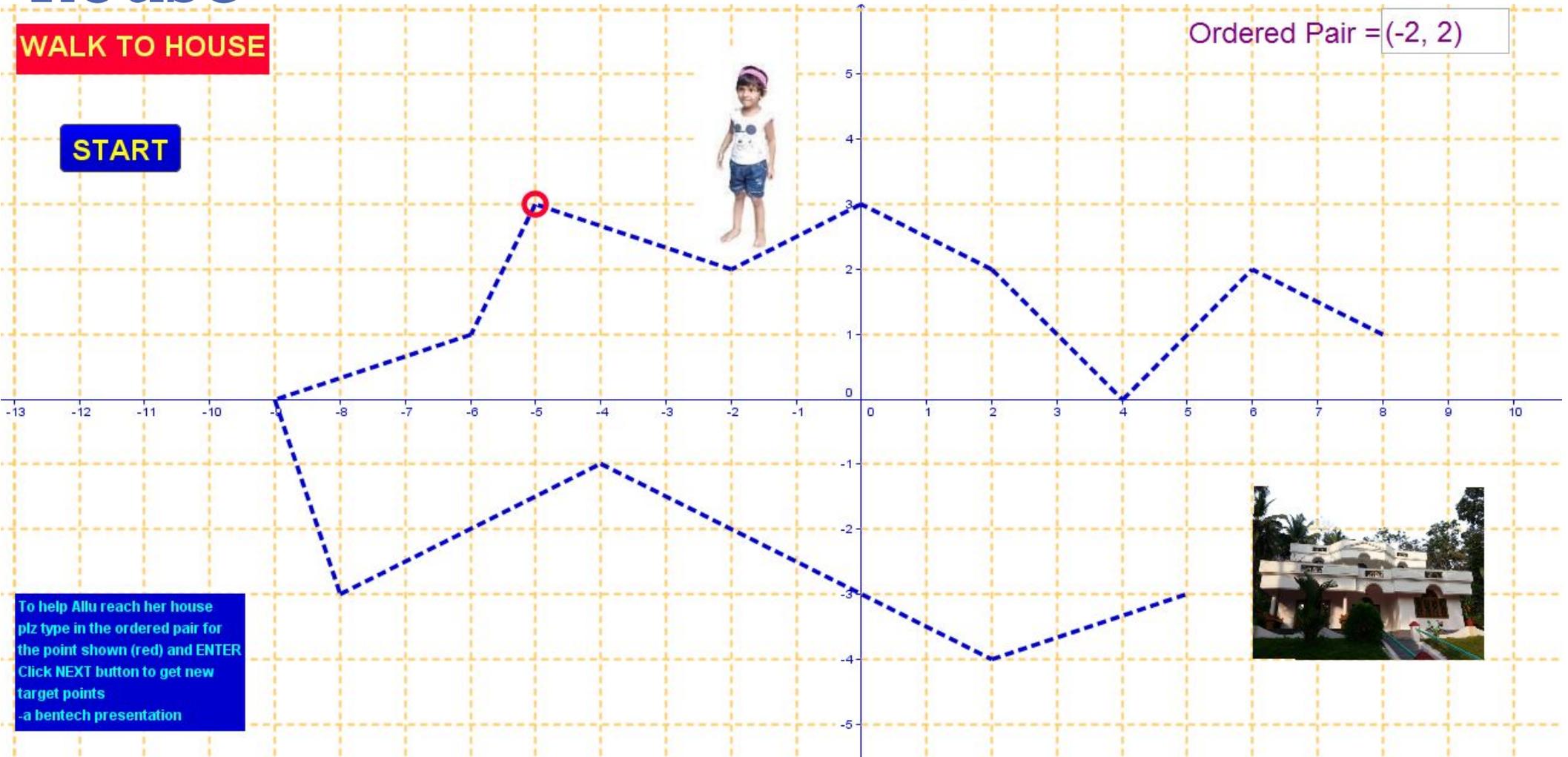
Help me reach my house



WALK TO HOUSE

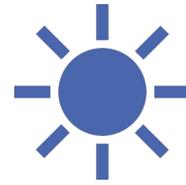
START

Ordered Pair = (-2, 2)



To help Allu reach her house
plz type in the ordered pair for
the point shown (red) and ENTER
Click NEXT button to get new
target points
-a bentech presentation

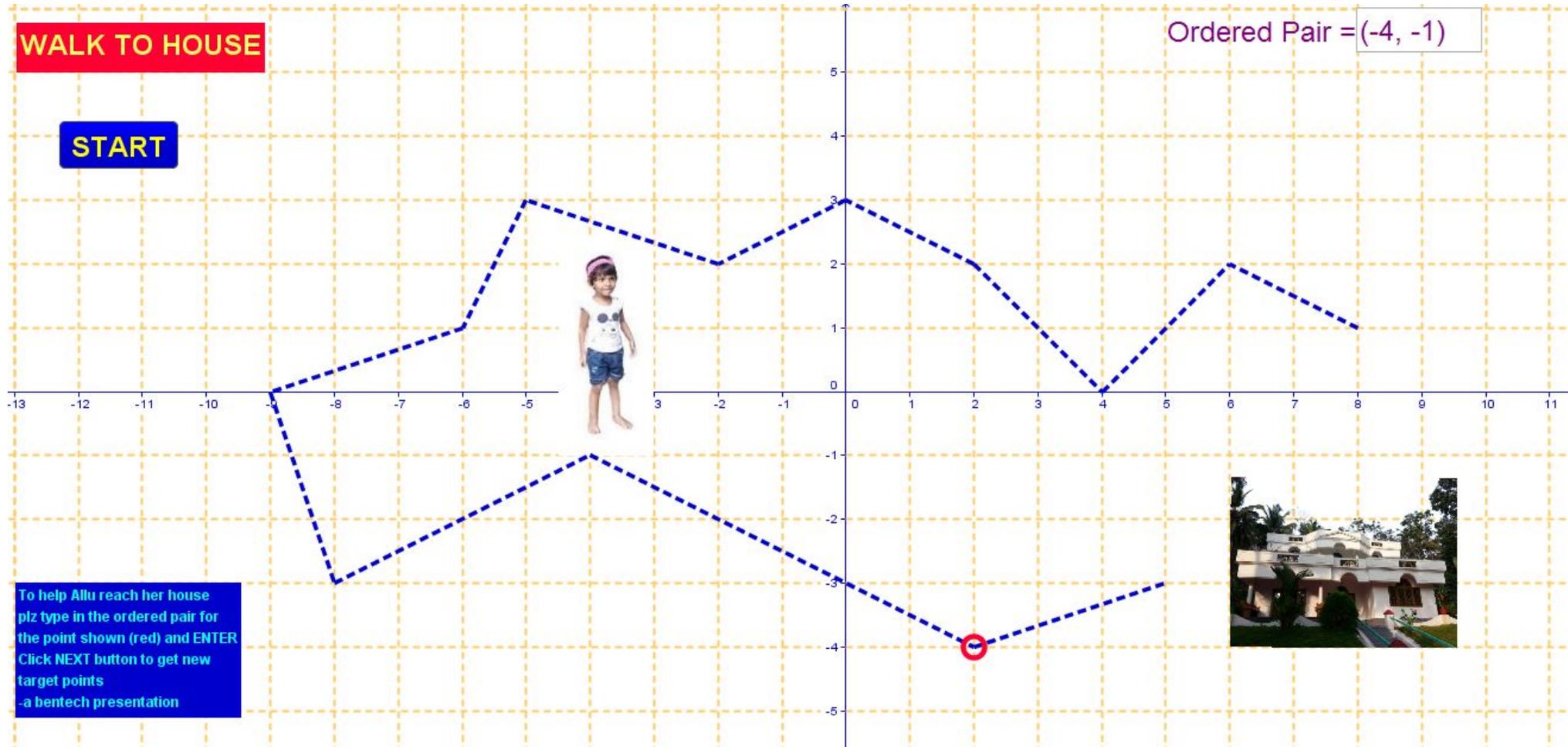
Help me reach my house



WALK TO HOUSE

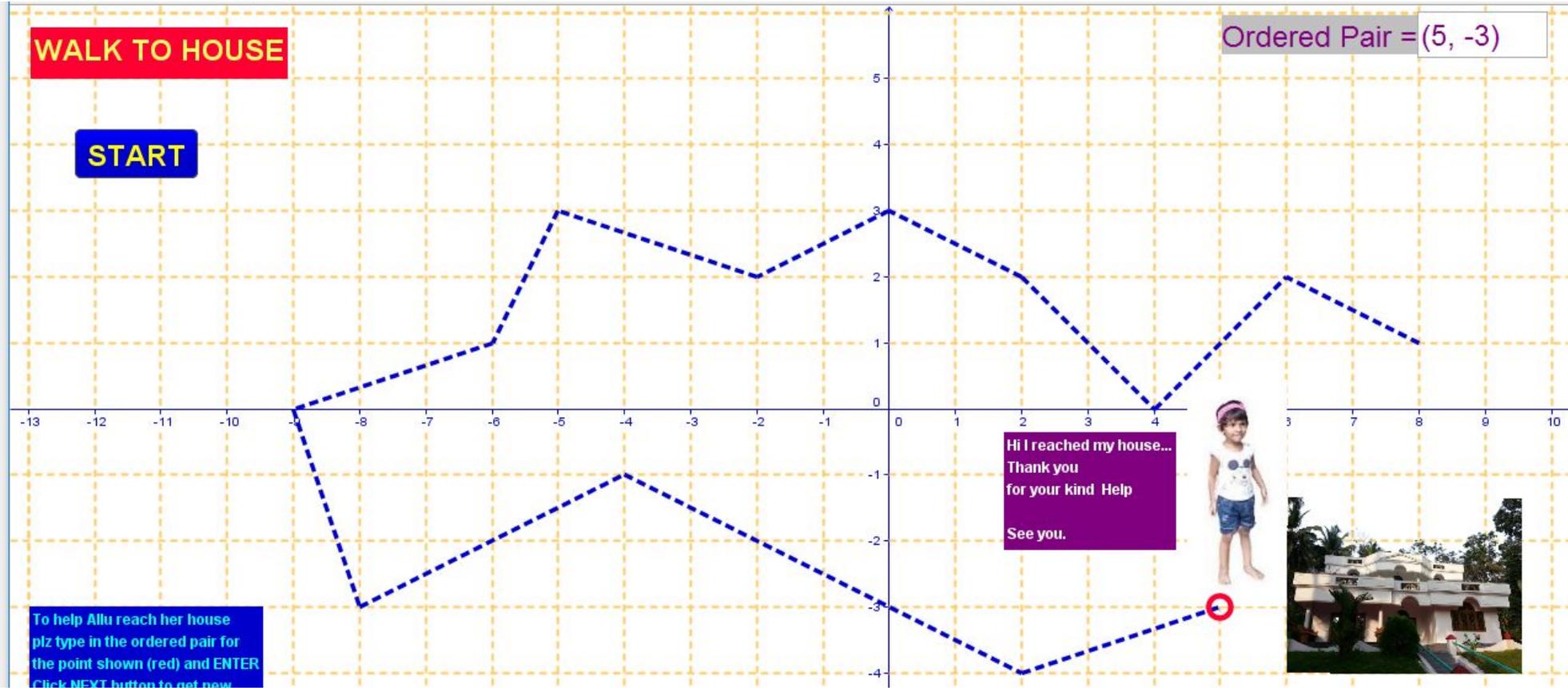
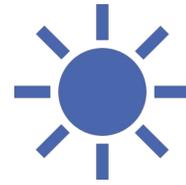
START

Ordered Pair = (-4, -1)



To help Allu reach her house plz type in the ordered pair for the point shown (red) and ENTER
Click NEXT button to get new target points
-a bentech presentation

Help me reach my house



WALK TO HOUSE

START

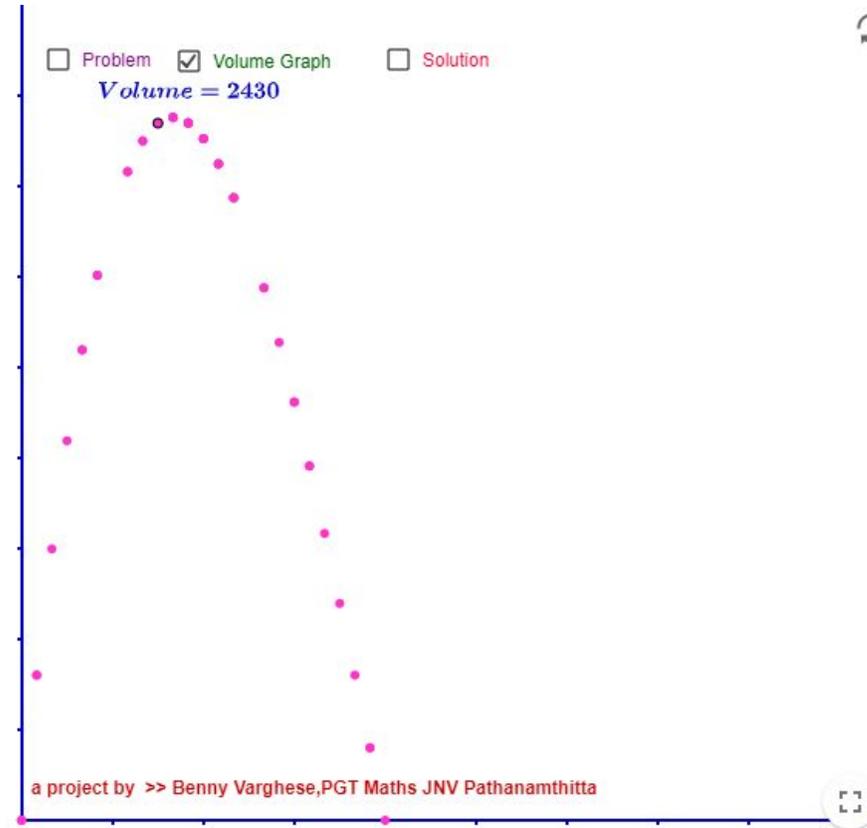
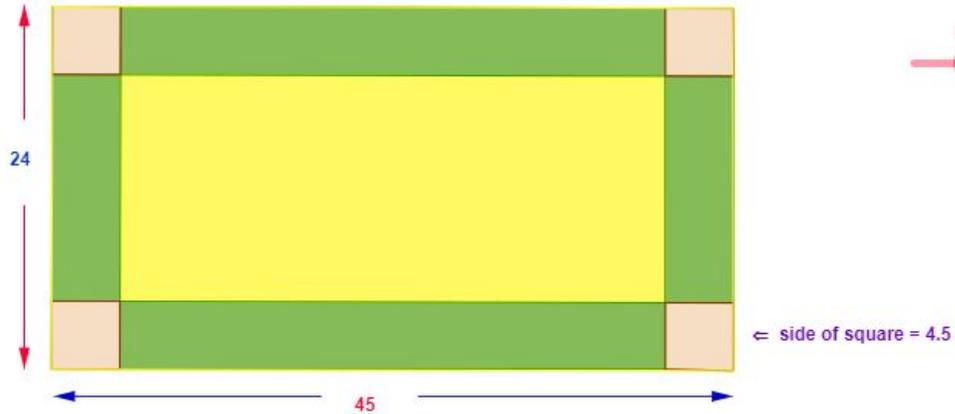
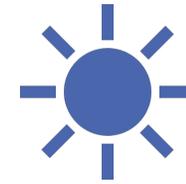
Ordered Pair = (5, -3)

To help Allu reach her house plz type in the ordered pair for the point shown (red) and ENTER. Click NEXT button to get new

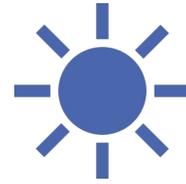
Hi I reached my house...
Thank you
for your kind Help
See you.



Box having Maximum Volume



Maths Cricket

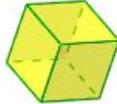


Maths Cricket

Minimum No on dice >>



Sharan



TEAM B
TEAM A



Toss and START

Team B won the toss and Bats

TOTAL >>?

TOTAL >>?

TEAM A

Player1>>

Player2>>

TEAM B

Player1>>

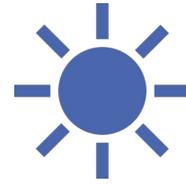
Player2>>

Hide/Unhide Rules

a bentech presentation



Maths Cricket



Maths Cricket

Minimum No on dice >>



Sharan

TEAM B
TEAM A



Throw Plz

Toss and START

$$4 + 6 - 6 = ?$$

Team B won the toss and Bats

ANS=

TOTAL >>?

TOTAL >>?

TEAM A

Player1 >>

Player2 >>

TEAM B

Player1 >>

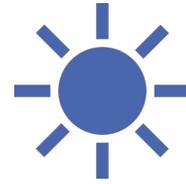
Player2 >>

Hide/Unhide Rules

a bentech presentation



Maths Cricket



Maths Cricket

Minimum No on dice >>

Toss and START

Team B won the toss and Bats

TEAM B
TEAM A

Throw

3

OUT

Sharan

TOTAL >>?
TOTAL >>?

TEAM A

Player1 >>

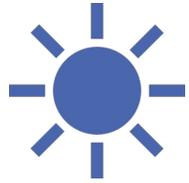
Player2 >>

TEAM B

Player1 >>

Player2 >>

Hide/Unhide Rules **a bentech presentation**



Thank you .

