UNIT - 8 Srinivasa Ramanujan

ACTIVITY - 1

Numbers are fun. Let us play a game of numbers in pairs.

To play this game, here are the steps to be followed.

Step -1 – Ask your friend to think of a number.

Step -2 – Tell him to add seven to that number.

Step -3 – Ask him to multiply the added number by two, then subtract 4 from the number.

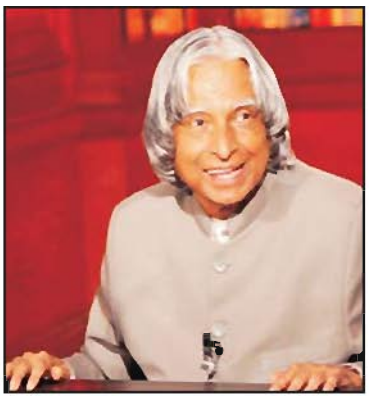
Step -4 – Ask him to tell you the number that he has arrived at.

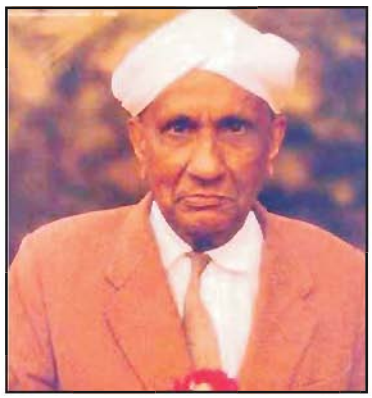
Step -5 – Now you divide this number by 2 and subtract 5 out of that number.

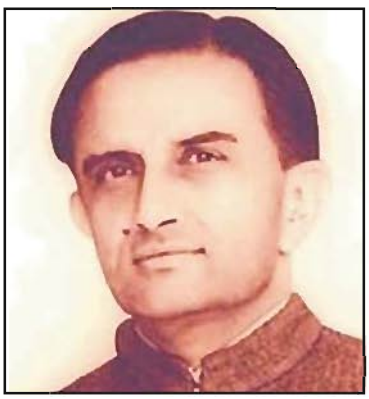
At the end you will get the number your friend has thought of.

ACTIVITY - 2

Identify these famous scientists. Name them and find the information to complete the table.







Sr. No	Name of the scientist	Subject	Research Done

ACTIVITY - 3

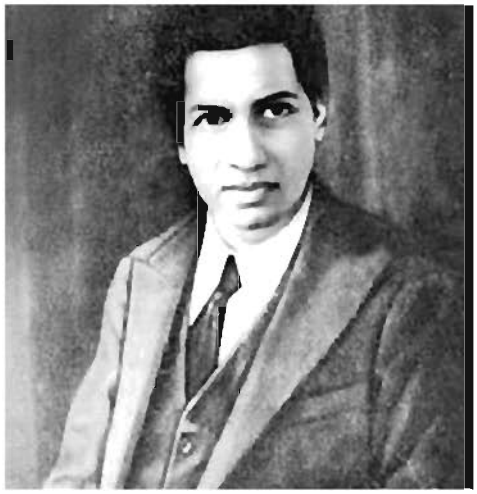
SRINIVASA RAMANUJAN : THE MAN WHO LIVED WITH NUMBERS

We celebrated the 125th birth anniversary of Srinivasa Ramanujan in 2012. Inaugurating the year long celebration at the University of Madras (on December 26), Dr. Manmohan Singh declared 2012 as a National Mathematical Year and Ramanujan's birthday as the National Mathematics Day. A commemorative stamp in honour of Srinivas Ramanujan was issued on the occasion.

Once a mathematics period for class –VIII was in progress in a small school in Tamil Nadu. "Any number when divided by the same number becomes unity", said the teacher. "But sir, what if the number is 0" ? asked a thin dark – eyed boy, leaving his teacher speechless. The boy was Srinivasa Ramanujan, the mathematical genius, who made extraordinary contributions to mathematical analysis, number theory, infinite series and continued fractions. During his short lifetime of 32 years, Ramanujan independently compiled nearly 3900 results (mostly identities and equations).

Born on December 22, 1887, in a poor family in Erode, Tamil Nadu, Ramanujan was interested in Maths right from childhood. He demonstrated unusual mathematical skills at school, winning accolades and awards. By the time he was 14, he could solve problems in Trigonometry which even college students could not.

Strange as it may sound, the school boy who stood first in his class and



could teach Trigonometry to students in college, was unable to secure pass marks in any subject, other than mathematics, when he entered college. He appeared three times for his F.A. examination but failed each time because he could not get passing marks in English.

Dejected by his college education in Tamil Nadu, Ramanujan wrote to G. H. Hardy (an acclaimed mathematician of his time) at Cambridge in 1913, forwarding his research work. Impressed by his work, the University admitted Ramanujan without an application in 1914.

While at Cambridge, he published many papers on a variety of topics. He was elected to the London Mathematical Society. He became a Fellow of the Royal Society in 1918 (the youngest one to do so). He was elected "for his investigation in Elliptic functions and the Theory of Numbers".

However, the strenuous work, inadequate food and loneliness took their toll on his health and Ramanujan fell ill in 1917. He returned to India in 1919 and died on April 26, 1920.

As a part of the year long celebration to mark the 125th birth anniversary of Ramanujan the Ramanujan Mathematical Society (RMS) held a series of activities that year. A mathematics centre named after Ramanujan was set up in Chennai. It has a host of facilities including a museum. A documentary, tracing the history of mathematics in India was also made. Efforts will also be made to bring out the biography of Ramanujan by Robert Kanigel under the title, The Man Who Knew Infinity – A Life of the Genius Ramanujan, in English.

Key Words

inaugurate – to officially open or start something

commemorative – attempt to remember and respect an important person or event in the past

fraction – a small part or amount of something

compile – to collect and bring together different items

accolade – praise or an award for an achievement

trigonometry – the type of mathematics dealing with sides and angles of triangles

elliptic – geometry

Answer the questions.

1. What was unusual about Ramanujan at school?

2. How was he different from the others at the age of fourteen?

3. Why was Srinivasa dejected by his college education in Tamilnadu?

4. Who saw Ramanjan's work in Cambridge? Why was his admission into college unusual?

5. What were the causes of Ramanujan's poor health at Cambridge ?

Complete the sentences.

1. Ramanujan was a Mathematical genius as he made_____

2. A mathematical society named after Ramanujan _____

ACTIVITY - 4

Match the words of column A with the opposites in column B.

A	B
multiply	death
pass	divide
short	end
birth	fail
begin	long

Now use the words given in column B in the blanks below.

1. There was a long queue at the exit gate at the _____ of the movie.
2. The_____ of the president of the society made everybody very sad.
3. We have to stand in a _____ queue for tickets at the railway station.
4. Mother said to her son " You will _____ in your exam if you do not study properly."
5. "Let us _____ the class into four groups." , the teacher said to her students.

ACTIVITY - 5

In the magic grid given below there are five hidden verbs. Find and circle them. Then use those words in the sentences given below.

1. _____ 2. _____

3. _____ 4. _____

5. _____

A	S	D	E	N	D	T
R	L	B	Q	G	E	O
T	E	L	D	R	P	L
C	P	H	E	A	R	D
S	T	D	H	N	T	V
W	A	T	C	H	E	D

1. My baby brother _____ all through the functions.
2. We often _____ our time watching TV in the evening.
3. I _____ the sound of the blast while shopping in the market.
4. Sheila _____ her mother that she would be late in returning home.
5. The football fans _____ the final of the match with a lot of expectations from their teams.

ACTIVITY - 6

Study the following sentences :

Note that the present perfect tense is formed by using have /has + the third form (the past participle) of the verb.

1.	I have written a poem.
2.	We have lost a lot of money.
3.	He has bought a beautiful vase.
4.	That tall girl has gone to Canada.

Now complete these sentences using the present perfect form of the verbs given in the brackets.

1. I _____ *(eat)* a dozen oranges.
2. The plumber _____ *(repair)* the taps.
3. The cobbler _____ *(mend)* my shoes.
4. My friends _____ *(collect)* all the dry leaves.
5. They _____ *(put)* them in a heap. The gardener will take them away.
6. My friend _____*(buy)* a gas balloon.

ACTIVITY - 7

Fill in the blanks with suitable phrasal verbs given in the box.

go off, go up, go down, go away, go along

1. Chankaya has _____ in history as a great statesman.
2. My neighbors have _____ for a few weeks to the hills.
3. You may have some difficulty at first but you'll find it easier as you _____.
4. The gun _____ by accident but fortunately no one was injured.
5. The price of petrol has _____.

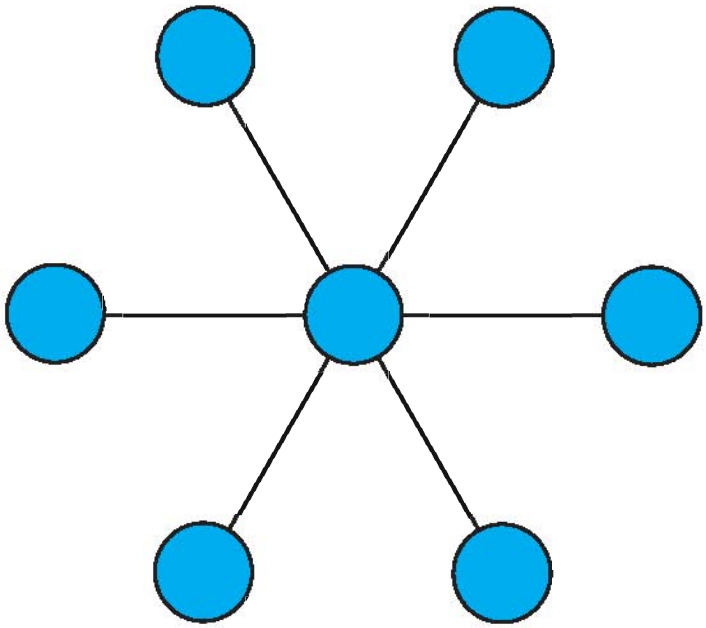
ACTIVITY - 8

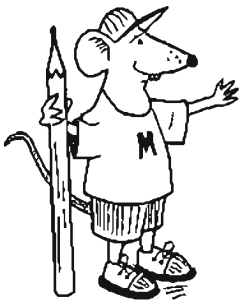
Work in pairs. Design a commemorative stamp for S. Ramanujan and talk about your design. Later, prepare a collage of all the commemorative stamps and display it on the bulletin board.

ACTIVITY - 9

Puzzle time

Seven up!



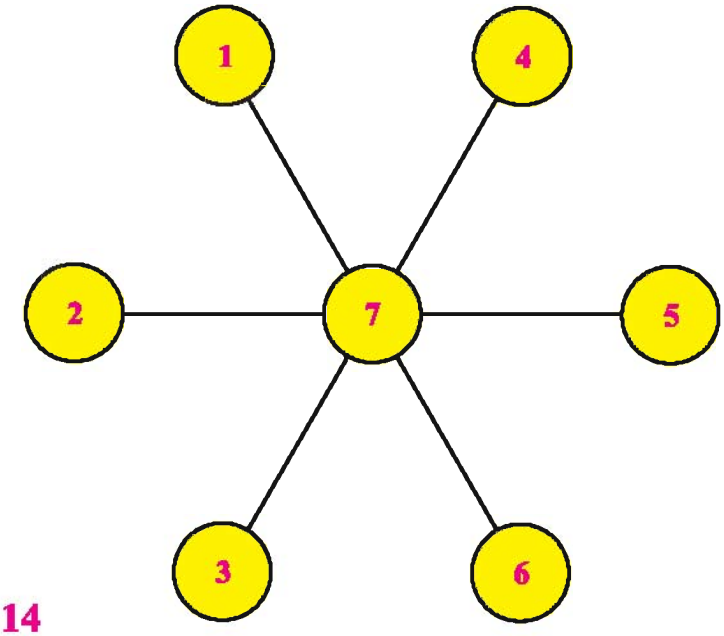


Put the Numbers 1, 2, 3, 4, 5, 6 and 7 in the circles so that each straight line of three numbers adds up to the same total.

Find the answer on the next page.

Puzzle time

Seven up!



These lines all add up to 14

I expect you found this one not too tricky. And no wonder!
There were several different ways of doing it!
Amazing eh, but you could have 7 in the middle, or 4 or even 1.
I've shown you one way above, can you work out others?

ACTIVITY - 10

Organize a science exhibition with experiments in your class during one of your activity period. Invite the other classes and let your principal Madam/ Sir rank the best project. Mathematical puzzles too can be exhibited.