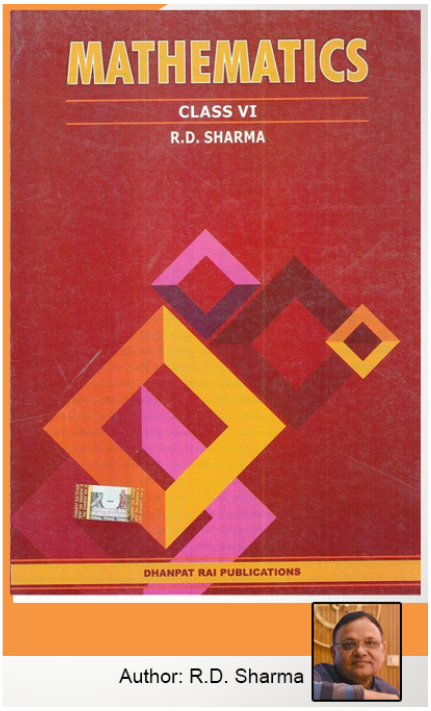
Class 6 - Chapter 14 Circles



RD Sharma Solutions for Class 6 Maths Chapter 14–Circles

Class 6: Maths Chapter 14 solutions. Complete Class 6 Maths Chapter 14 Notes.

RD Sharma Solutions for Class 6 Maths Chapter 14–Circles

RD Sharma 6th Maths Chapter 14, Class 6 Maths Chapter 14 solutions

Exercise 14.1 page: 14.4

1. Explain the following:

(i) Circle

(ii) Radius

(iii) Centre

(iv) Diameter

(v) Chord

(vi) Interior of a circle.

Solution:

(i) Circle – A circle is a set of all those points in a plane whose distance from a fixed point remains constant.

(ii) Radius – The radius of a circle is the distance between the all the points of the circle to its centre.

(iii) Centre – The centre of a circle is a fixed point which is at a constant distance from all the points.

(iv) Diameter – A line segment passing through the centre of a circle, and having its end-points on the circle is called a diameter of the circle.

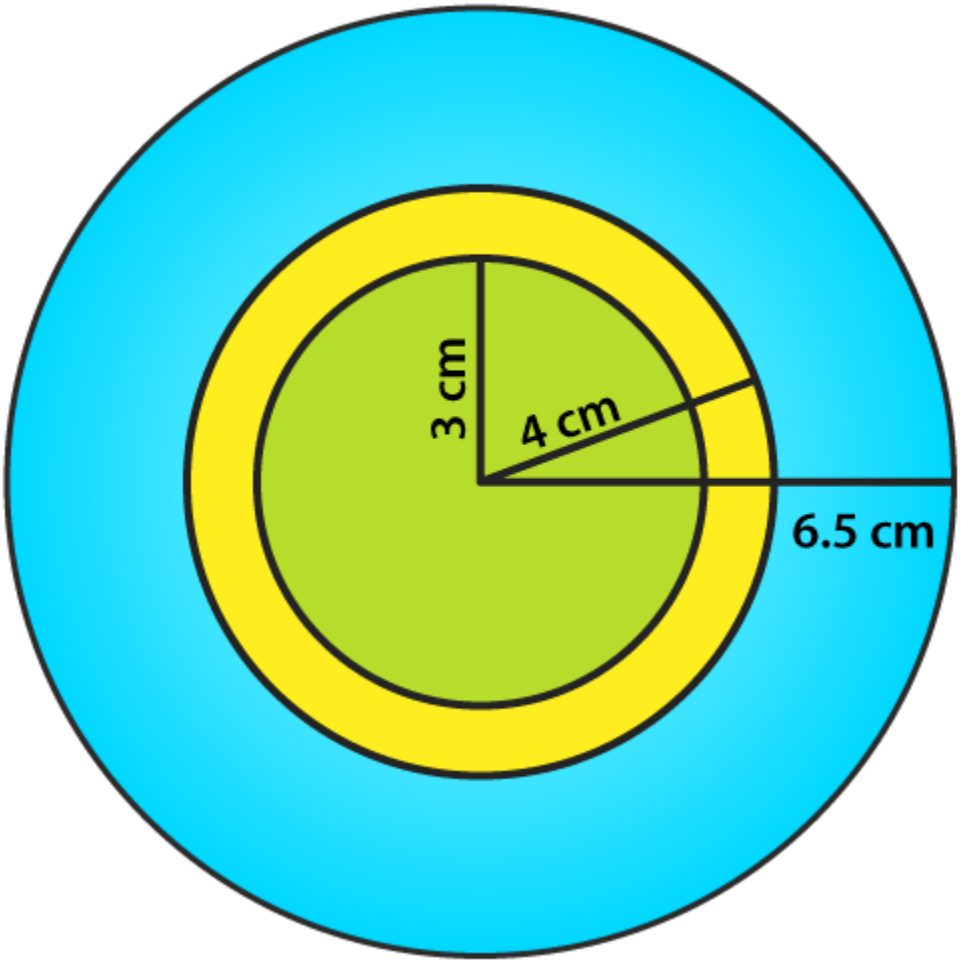
(v) Chord – A line segment with its end-points lying on a circle is called the chord of the circle.

(vi) Interior of a circle – The part of a plane inside the circle consisting of all the points is called the interior of a circle.

2. Take a point on your notebook and draw circle of radii 4 cm, 3 cm and 6.5 cm, each having the same centre O.

Solution:

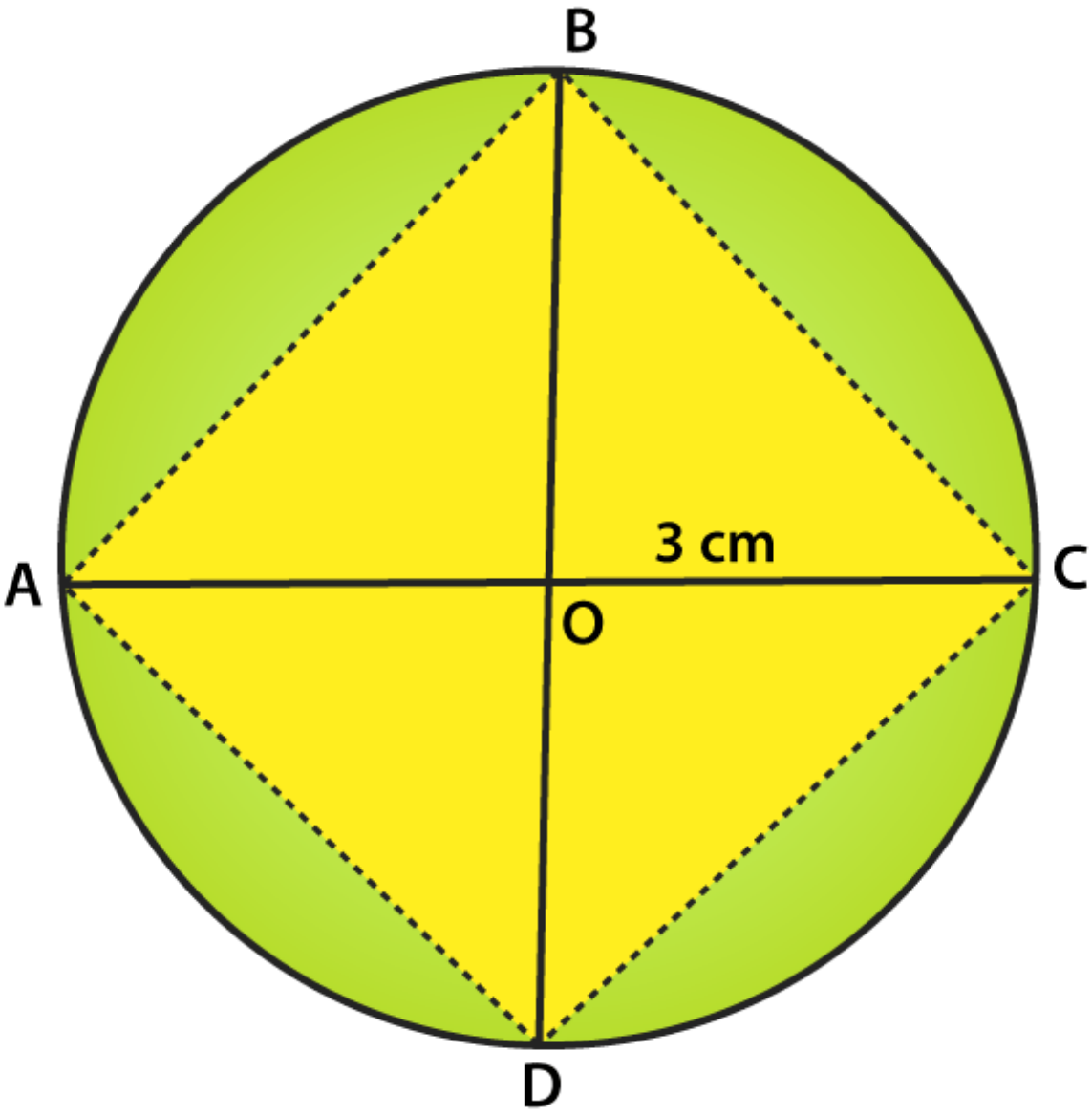
The figure given below shows circles of 4 cm, 3 cm and 6.5 cm radii having the same centre.



3. Draw a circle with centre O and any radius. Draw AC and BD two perpendicular diameters of the circle. Join AB, BC, CD and DA.

Solution:

The figure given below shows a circle with centre O and two perpendicular diameter AC and BD.



4. Draw a circle with centre O and radius 6 cm. Mark points P, Q, R such that

(i) P lies on the circle,

(ii) Q lies in the interior of the circle, and

(iii) R lies in the exterior of the circle.

Rewrite each of the following statements using the correct symbol (=, < or >):

(i) OQ …… 5 cm (ii) OP ……. 5 cm (iii) OR …… 5 cm.

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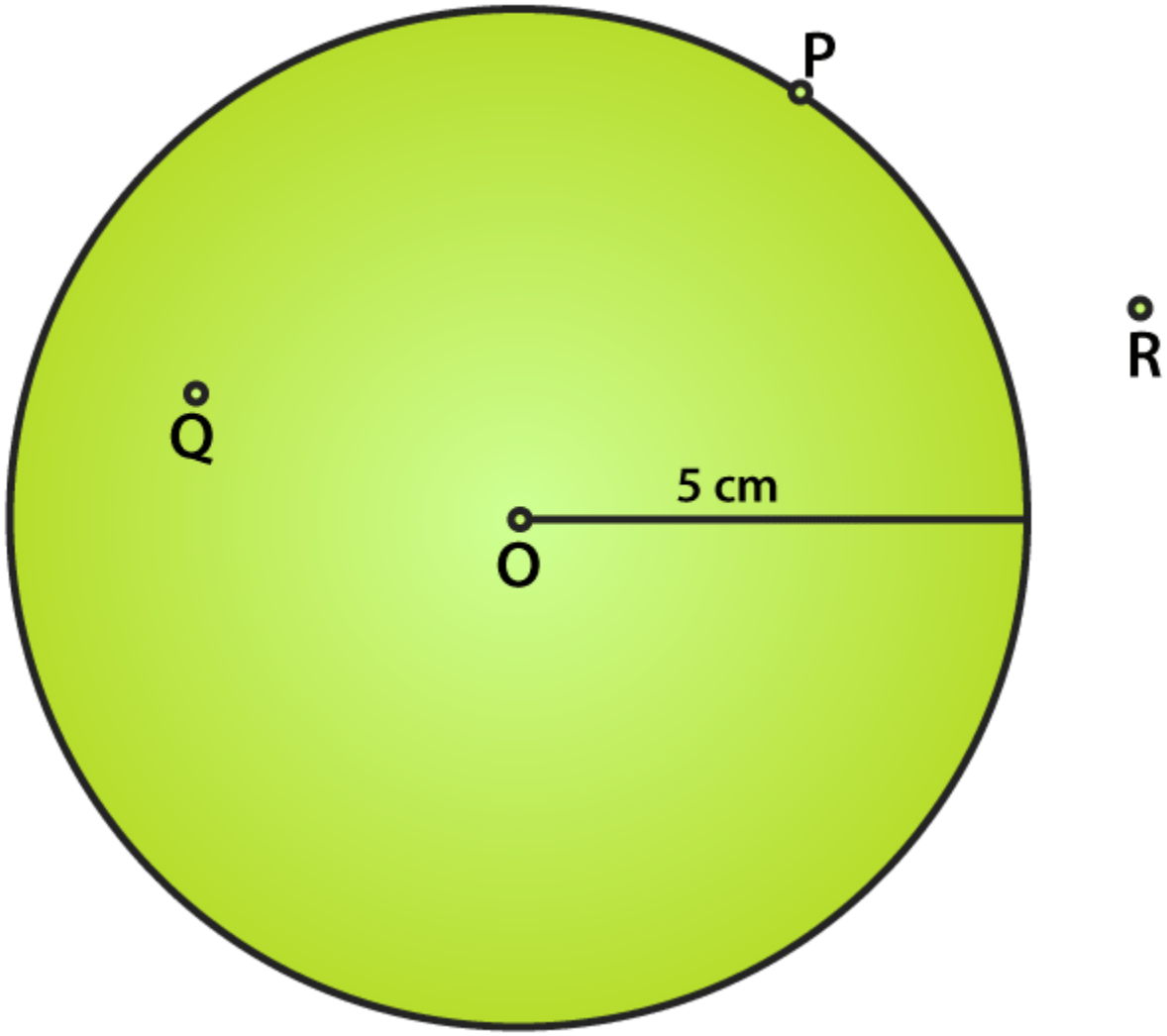
Solution:

The figure given below shows the points P, Q and R such that

(i) P lies on the circle,

(ii) Q lies in the interior of the circle, and

(iii) R lies in the exterior of the circle.



The statements can be written as

(i) OQ < 5 cm

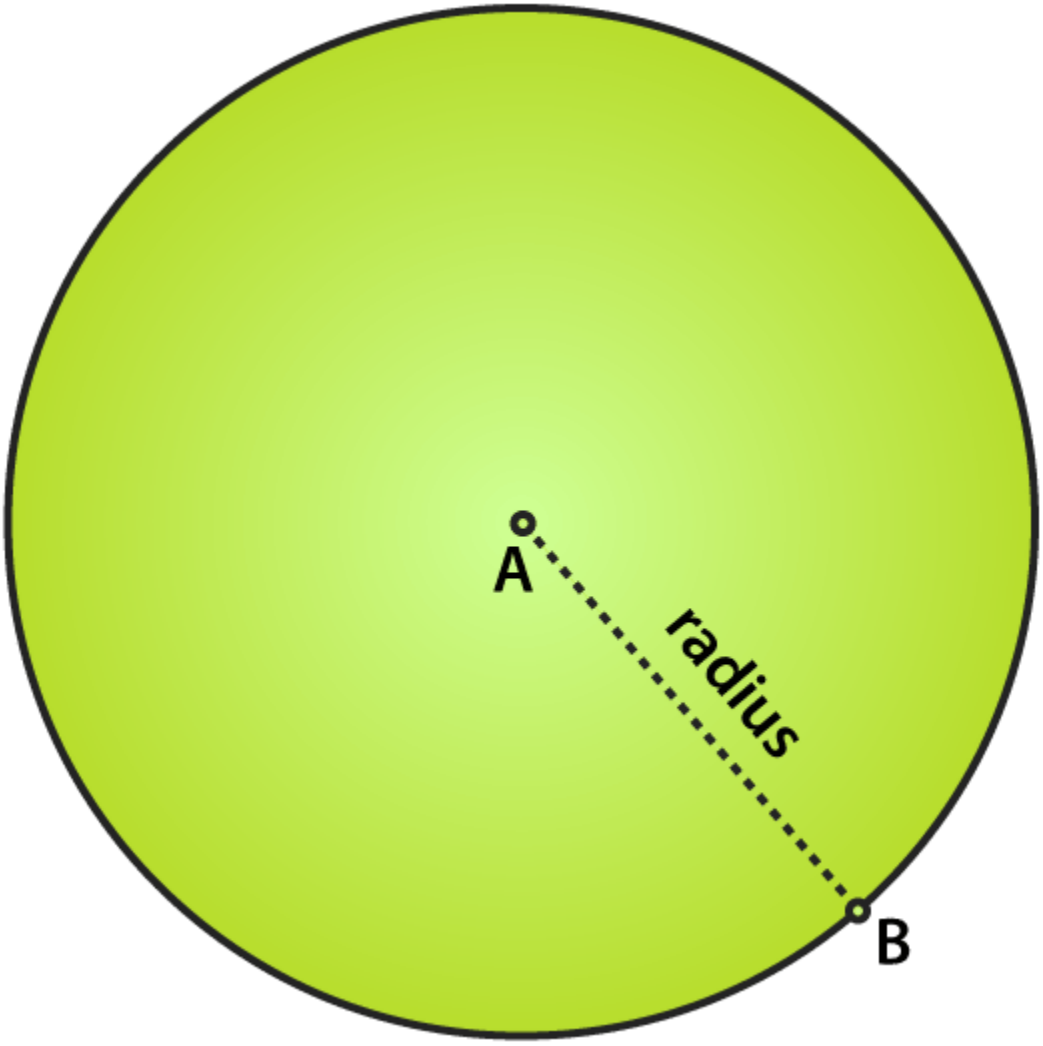
(ii) OP = 5 cm

(iii) OR > 5 cm

5. Take two points A and B on the page of your note book. Draw a circle with centre A which passes through B.

Solution:

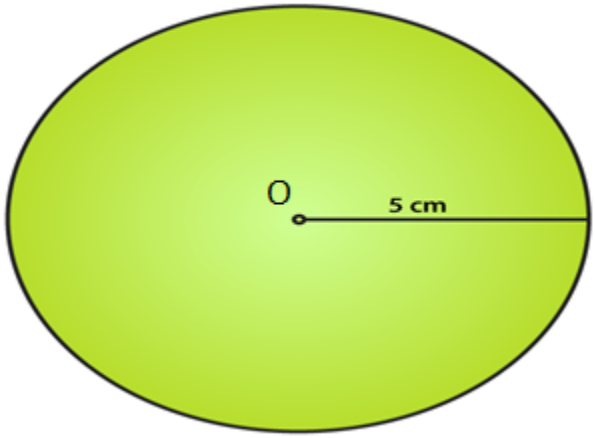
The figure given below shows the circle with A as centre and a line which passes through B.



6. Draw a semi-circle with centre O and radius 5 cm. Is the diameter that determines the semi-circle, a part of the semi-circle?

Solution:

The figure given below shows a semi-circle with centre O and radius 5 cm.



We know that a semi-circle is the end point of a diameter which divides the circle into two equal parts.

No, the diameter does not determine the semi-circle and it is the end points of the diameter which finds the semi-circle or a part of the semi-circle.

7. The diameter of a circle is 14 cm, find its radius.

Solution:

It is given that

Diameter of a circle = 14 cm

We know that

Radius of a circle = Diameter / 2

By substituting the values

Radius of a circle = 14/2 = 7 cm.

8. Given a circle with centre O and radius 2.5 cm, what is the length of the longest chord of the circle.

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Solution:

We know that the diameter of a circle is its longest chord which is twice its radius.

So the length of the longest chord of the circle = 2 (2.5) = 5 cm.

9. Fill in the blanks:

(i) The diameter of a circle is ……. times its radius.

(ii) The diameter of a circle is the ……. chord of the circle.

(iii) The diameter of a circle pass through ……

(iv) A chord of a circle is a line segment with its end points on the ……

(v) If we join any two points on a circle by a line segment, we obtain …… of the circle.

(vi) A radius of a circle is a line segment with one end at ……. and the other end at …..

(vii) All radii of a circle are ……

(viii) The diameters of a circle are ……

(ix) The total number of diameters of a circle is …..

(x) Every point on a circle is ……. from its centre.

(xi) A chord of a circle contains exactly …… points of the circle.

(xii) A diameter is the longest …….

(xiii) Concentric circles are circles having ……

Solution:

(i) The diameter of a circle is two times its radius.

(ii) The diameter of a circle is the longest chord of the circle.

(iii) The diameter of a circle pass through its centre.

(iv) A chord of a circle is a line segment with its end points on the circle.

(v) If we join any two points on a circle by a line segment, we obtain chord of the circle.

IndCareer

(vi) A radius of a circle is a line segment with one end at centre and the other end at circle.

(vii) All radii of a circle are equal.

(viii) The diameters of a circle are concurrent.

(ix) The total number of diameters of a circle is infinite.

(x) Every point on a circle is equidistant from its centre.

(xi) A chord of a circle contains exactly two points of the circle.

(xii) A diameter is the longest chord.

(xiii) Concentric circles are circles having same centre.

10. In each of the following, state if the statement is true (T) or false (F):

(i) Every circle has a centre.

(ii) The centre of a circle is a point of the circle.

(iii) Any two radii of a circle make up a diameter.

(iv) Every chord of a circle is parallel to some diameter of the circle.

(v) A circle is symmetric about each of its diameters.

(vi) The diameter is twice the radius.

(vii) A radius is a chord of the circle.

(viii) Concentric circles have the same radii.

(ix) The nearer a chord to the centre of a circle, the longer is its length.

Solution:

(i) True.

(ii) False.

(iii) False.

(iv) False.

(v) True.

(vi) True.

(vii) False.

(viii) False.

(ix) True.

Objective Type Questions page: 14.5

Mark the correct alternative in each of the following:

1. A circle of radius r cm has diameter of length

(a) r cm

(b) 2r cm

(c) 4r cm

(d) r/2 cm

Solution:

The option (b) is the correct answer.

A circle of radius r cm has diameter of length 2r cm.

2. A chord of a circle passing through its centre is equal to its

(a) radius

(b) diameter

(c) circumference

(d) none of these

Solution:

The option (b) is the correct answer.

A chord of a circle passing through its centre is equal to its diameter.

3. The total number of diameters of a circle is

(a) 1

(b) 2

(c) 4

(d) uncountable number

Solution:

The option (d) is the correct answer.

The total number of diameters of a circle is uncountable number.

4. By joining any two points on a circle, we obtain its

(a) radius

(b) diameter

(c) chord

(d) circumference

Solution:

The option (c) is the correct answer.

By joining any two points on a circle, we obtain its chord.

5. The longest chord of a circle is equal to its

(a) radius

(b) diameter

(c) circumference

(d) perimeter

Solution:

The option (b) is the correct answer.

The longest chord of a circle is equal to its diameter.

6. How many circles can be drawn to pass through two given points?

(a) 1

(b) 2

(c) 0

(d) As many as possible

Solution:

The option (d) is the correct answer.

Many circles can be drawn to pass through two given points.

7. How many circles can be drawn to pass through three non-collinear points?

(a) 1

(b) 2

(c) 0

(d) As many as possible

Solution:

The option (a) is the correct answer.

Only 1 circle can be drawn to pass through three non-collinear points.

Chapterwise RD Sharma Solutions for Class 6 Maths :

- Chapter 1–Knowing Our Numbers
- Chapter 2–Playing with Numbers
- Chapter 3–Whole Numbers
- Chapter 4–Operations on Whole Numbers
- Chapter 5–Negative Numbers and Integers
- Chapter 6–Fractions
- Chapter 7–Decimals
- Chapter 8–Introduction to Algebra
- Chapter 9–Ratio, Proportion and Unitary Method
- Chapter 10–Basic Geometrical Concepts
- Chapter 11–Angles
- Chapter 12–Triangles
- Chapter 13–Quadrilaterals
- Chapter 14–Circles
- Chapter 15–Pair of Lines and Transversal
- Chapter 16–Understanding Three-Dimensional Shapes
- Chapter 17–Symmetry
- Chapter 18–Basic Geometrical Tools
- Chapter 19–Geometrical Constructions
- Chapter 20–Mensuration
- Chapter 21–Data Handling - I (Presentation of Data)
- Chapter 22–Data Handling - II (Pictographs)
- Chapter 23–Data Handling - III (Bar Graphs)

About RD Sharma

RD Sharma i*sn't the kind of author you'd bump into at lit fests. But his bestselling books have helped many* CBSE *students lose their dread of* maths. *Sunday Times profiles the tutor turned internet star*

He dreams of algorithms that would give most people nightmares. And, spends every waking hour thinking of ways to explain concepts like 'series solution of linear differential equations'. Meet Dr Ravi Dutt Sharma — mathematics teacher and author of 25 reference books — whose name evokes as much awe as the subject he teaches. And though students have used his thick tomes for the last 31 years to ace the dreaded maths exam, it's only recently that a spoof video turned the tutor into a YouTube star.

R D Sharma had a good laugh but said he shared little with his on-screen persona except for the love for maths. "I like to spend all my time thinking and writing about maths problems. I find it relaxing," he says. When he is not writing books explaining mathematical concepts for classes 6 to 12 and engineering students, Sharma is busy dispensing his duty as vice-principal and head of department of science and humanities at Delhi government's Guru Nanak Dev Institute of Technology.