

CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : REAL NUMBERS SUBJECT : MATHEMATICS	Marks : 10 Time :
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1. State : Fundamental Theorem of Arithmetic. **1**
2. Given that HCF and LCM of two numbers are 124 and 1736 resp. If one of the number is 248, find the other. **1**
3. Without actual division, find whether the rational number $\frac{17}{3125}$ is a terminating or a non-terminating repeating decimal. Also, write its decimal form if it is a terminating decimal. **2**
4. Find LCM of 324 and 594 by prime factorisation method. **2**
5. Find the HCF of 1794, 2346 and 4761 by Euclids Division Lemma. **4**

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CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : POLYNOMIALS SUBJECT : MATHEMATICS	Marks : 10 Time :
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1. If α and β are the zeroes of the polynomial $p(x) = x^2 + 12x + 35$, evaluate $\frac{1}{\alpha} + \frac{1}{\beta}$ **2**
2. Use division algorithm to check whether the polynomial $g(x) = 2x^2 - 3x - 2$ is a factor of the polynomial $f(x) = 8x^4 - 28x^3 + 18x^2 + 13x - 2$ **2**
3. Determine the value of m such that $(x - 5)$ is a factor of the polynomial $f(x) = 3x^3 - 16x^2 + mx + 50$ **2**
4. Obtain all zeroes of $3x^4 - 9x^3 - 34x^2 + 12x + 40$, if two of its zeroes are $\sqrt{\frac{4}{3}}$ and $-\sqrt{\frac{4}{3}}$. **4**

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CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : PAIR OF LINEAR EQUATIONS IN TWO VARIABLES SUBJECT : MATHEMATICS	Marks : 10 Time :
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1. Show that the system of equation $2x + 3y = 4$; $3x - y = - 5$ has a unique solution. Find the solution. **2**
2. Find the value of k for which the system of equations $8x + 5y = 9$; $kx + 10y = 15$ has no solution. **2**
3. Five years ago, A was thrice as old as B and 10 years later A shall be twice as old as B. What are the present ages of A and B ? **2**
4. Draw the graphs of the following equations $3x - 4y + 6 = 0$ and $3x + y - 9 = 0$. Also determine the co-ordinates of the vertices of the triangle formed by these lines and the x - axis. **4**

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CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : QUADRATIC EQUATIONS SUBJECT : MATHEMATICS	Marks : 10 Time :
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1. Solve by factorization method : $12x^2 + x - 6 = 0$ **1**
2. Solve : $\frac{1}{x-3} - \frac{1}{x+5} = \frac{1}{6}$; $x \neq 3, x \neq -5$ **2**
3. The sum of a number and its positive square root is $\frac{6}{25}$. Find the number. **3**
4. A two digit number is such that the product of its digits is 15. If 18 is added to the number the digits interchange their places. Find the number. **4**

CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : ARITHMETIC PROGRESSION SUBJECT : MATHEMATICS	Marks : 10 Time :
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1. Find the 9th term from the end of the A.P. 5, 9, 13, 17,, 69. **2**
2. If the sum of first n terms of an A.P. is given by $S_n = 4n^2 - 3n$, find the n^{th} term of the A.P. **2**
3. Find the sum of all three digit natural numbers which are divisible by 13. **3**
4. The sum of first $n, 2n, 3n$ terms of an A.P. are S_1, S_2, S_3 respectively. Prove that $S_3 = 3(S_2 - S_1)$. **3**

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CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : INTRODUCTION TO TRIGONOMETRY SUBJECT : MATHEMATICS	Marks : 10 Time :
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1. Show that : $\cos 60^\circ \cos 30^\circ - \sin 60^\circ \sin 30^\circ = \cos 90^\circ$ **1**
2. Prove that : $\sqrt{\frac{1+\cos\theta}{1-\cos\theta}} = \operatorname{cosec} \theta + \cot \theta$ **3**
3. Prove that : $\frac{\sin \theta}{1-\cos \theta} + \frac{\cos \theta}{1-\sin \theta} + 1 = \frac{\sin \theta \cos \theta}{(1-\cos \theta)(1-\sin \theta)}$ **3**
4. Prove that : $\frac{\cos \theta - \sin \theta + 1}{\cos \theta + \sin \theta - 1} = \operatorname{cosec} \theta + \cot \theta$ using the identity **3**
 $\operatorname{cosec}^2 \theta = 1 + \cot^2 \theta$

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CBSE X	MT EDUCARE PVT. LTD.	Marks : 10
Date :	Chapter : APPLICATIONS OF TRIGONOMETRY	Time :
	SUBJECT : MATHEMATICS	

1. The angles of elevation of the top of a tower from two points P and Q at distances of a and b respectively from the base and in the same straight line with it are complementary. Prove that the height of the tower is \sqrt{ab} . **2**
2. The angles of elevation and depression of the top and bottom of a light house from the top of a building 60 m high are 30° and 60° resp. **4**
Find :
 - (i) the difference between the heights of the lighthouse and the building.
 - (ii) the distance between the lighthouse and the building.
3. A 7 m long flagstaff is fixed on the top of a tower on the horizontal plane. From a point on the ground, the angles of elevation of the top and bottom of the flagstaff are 60° and 45° resp. Find the height of the tower correct to one place of decimal. ($\sqrt{3} = 1.732$) **4**

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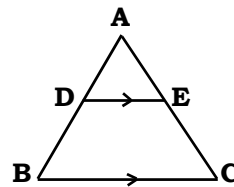
CBSE X	MT EDUCARE PVT. LTD.	Marks : 10
Date :	Chapter : CO-ORDINATE GEOMETRY	Time :
	SUBJECT : MATHEMATICS	

1. Find the area of a triangle whose vertices are A $(-5, -1)$, B $(3, -5)$ and C $(5, 2)$. **2**
2. Find the ratio in which the line segment joining $(2, -3)$ and $(5, 6)$ is divided by x -axis. **2**
3. Show that the points A $(1, 2)$, B $(5, 4)$, C $(3, 8)$ and D $(-1, 6)$ are the vertices of a square. **3**
4. Find the lengths of medians of ΔABC whose vertices are A $(-1, 3)$, B $(1, -1)$ and C $(5, 1)$. **3**

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CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : TRIANGLES SUBJECT : MATHEMATICS	Marks : 10 Time:
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1. In the adj. fig. $DE \parallel BC$ $AD = (4x - 3)$ cm,
 $AE = (8x - 7)$ cm, $BD = (3x - 1)$ cm and
 $CE = (5x - 3)$ cm. Find the value of x .



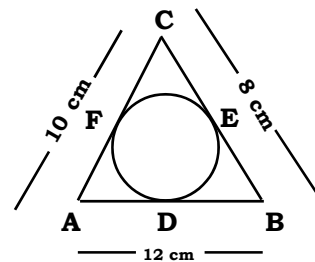
2. In a right angle triangle ABC, the perpendicular BD on hypotenuse AC is drawn. **2**
 Prove that : $AC \cdot CD = BC^2$
3. Two right triangle ABC and DBC are drawn on the same hypotenuse BC and on the same side of BC. If AC and BD intersect at P, **3**
 prove that : $AP \times PC = BP \times PD$
4. Prove that : If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, then the other two sides are divided in the same ratio. **3**

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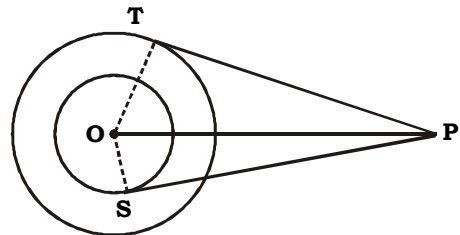
<p>CBSE X</p> <p>Date :</p>	<p>MT EDUCARE PVT. LTD.</p> <p>Chapter : CIRCLES</p> <p>SUBJECT : MATHEMATICS</p>	<p>Marks : 10</p> <p>Time:</p>
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1. From a point P, 10 cm away from the centre of a circle, a tangent PT of length 8 cm is drawn. Find the radius of this circle. 2

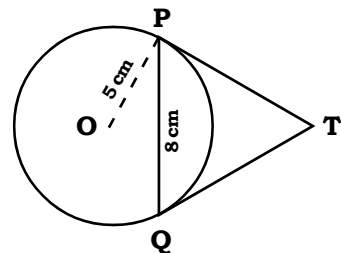
2. A circle is inscribed in a $\triangle ABC$ having sides 8 cm, 10 cm and 12 cm as shown in the adj. fig. Find the length of tangent segment from A to the circle.



3. In the adj. fig. O is the centre of two concentric circles of radii 4 cm and 6 cm resp. PT and PS are tangents to the outer and inner circle resp. If PT = 10 cm, find the length of PS (in cm) upto one place of decimal.



4. In the adj. fig. PQ is a chord of length 8 cm of a circle of radius 5 cm. The tangents at P and Q intersect at a point T. Find the length of TP.



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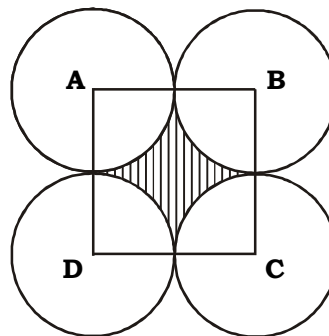
<p>CBSE X</p> <p>Date :</p>	<p>MT EDUCARE PVT. LTD.</p> <p>Chapter : CONSTRUCTIONS</p> <p>SUBJECT : MATHEMATICS</p>	<p>Marks : 10</p> <p>Time:</p>
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1. Draw a circle of 3.5 cm radius from a point P on the circle draw a tangent to the circle. **2**
2. Construct a ΔABC with sides $AB = 5$ cm, $BC = 6$ cm and $CA = 7$ cm. Construct a similar triangle each of whose sides is $\frac{4}{7}$ of the corresponding side of ΔABC . **4**
3. Draw two concentric circles of radii 3 cm and 5 cm. Construct a tangent to the smaller circle from a point on the larger circle. Measure the length of this tangent. **4**

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CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : AREAS RELATED TO CIRCLES SUBJECT : MATHEMATICS	Marks : 10 Time:
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- The areas of two circular fields are in the ratio 16 : 49. If the radius of the later is 14 m, what is the radius of the former? **2**
- If a wire is bent into the shape of a square, then the area of the square is 81 cm². If this wire is bent into a semi-circular shape, then find the area enclosed by the semi-circle. **2**
- The length of a minute hand of a clock is 14 cm. Find the area swept by the minute hand in 5 minutes. **3**
- In the adj. fig. ABCD is a square of side 14 cm. With centres A, B, C and D four circles are drawn such that each circle touches externally two of the remaining three circles. Find the area of the shaded region. **3**



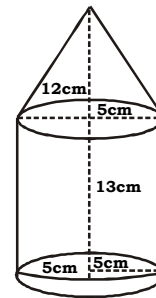
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CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : SURFACE AREA AND VOLUME SUBJECT : MATHEMATICS	Marks : 10 Time:
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1. Find the number of lead balls each 1 cm in diameter that can be made from a sphere of diameter 12 cm. **2**

2. If the radius of a sphere is increased by 2 cm, then its surface area increases by 352 cm^2 . What was the radius of the sphere before the increase? **3**

3. A toy is in the shape of a right circular cylinder with a hemisphere on one end and a cone at the other end the height and radius of the cylindrical part are 13 cm and 5 cm resp. The radii of the hemispherical and conical parts are the same as that of the cylindrical part. Calculate the surface area of the toy, if the height of conical part is 12 cm. (Take $\pi = \frac{22}{7}$) **5**



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CBSE X	MT EDUCARE PVT. LTD.	Marks : 10
Date :	Chapter : STATISTICS	Time:
	SUBJECT : MATHEMATICS	

1. The arithmetic mean of the following frequency distribution is 25. Determine the value of p . 2

Class	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50
Frequency	5	18	15	p	6

2. Find the mean age in years using step deviation method from the frequency distribution given below. 4

Class interval (age in yrs.)	Frequency
25 - 29	4
30 - 34	14
35 - 39	22
40 - 44	16
45 - 49	6
50 - 54	5
55 - 59	3
Total	70

3. The following table shows the number of casualties due to accidents at different age groups in a city. 4

Age (in yrs.)	5 - 15	15 - 25	25 - 35	35 - 45	45 - 55	55 - 65	65 - 75
No. of casualties	6	10	16	15	24	8	7

Find the median age (in yrs.) of casualties.

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CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : PROBABILITY SUBJECT : MATHEMATICS	Marks : 10 Time:
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1. Tickets numbered from 1 to 20 are mixed together and then a ticket is drawn at random. What is the probability that the ticket has a number which is a multiple of 3 or 7? **1**
2. A bag contains 5 red balls and some blue balls. If the probability of drawing a blue ball from the bag is four times that of red ball find the number of blue balls in the bag. **3**
3. From a pack of 52 playing cards, jacks, queens, kings and aces of red colour are removed. From the remaining a card is drawn at random. Find the probability that the card drawn is (i) a black queen (ii) a black jack (iii) a red card **3**
4. A student has 5 books, one each on English, Hindi, Mathematics, Science and Social Science. The number of pages in the five books are 223, 237, 288, 196 and 212 resp. One book out of the five is selected in such a way that each of the five books is equally likely to be selected. Find the probability of the following events – **3**
 - (i) the selected book is either a book on social science or a book on science.
 - (ii) the selected book has less than 200 pages.
 - (iii) the selected book has less than 200 pages and is either a book on science or on social science.

Best of Luck 