

CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : REAL NUMBERS SUBJECT : MATHEMATICS	Marks : 10 Time :
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1. State : Euclid's Division Lemma. **1**
2. Find the prime factorisation of 5460 **1**
3. Show that every positive odd integer is of the form $6q + 1$ or $6q + 3$ or $6q + 5$ where q is some integer. **2**
4. Prove that $2 + \sqrt{5}$ is irrational. **2**
5. Find the HCF of 5474, 9775 and 11730 by Euclid's 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. Find the zeroes of $4x^2 - 4x + 1$ and verify the relationship between the zeroes and the coefficients of the polynomial. **2**

2. If α and β are the zeroes of the polynomial $f(x) = 6x^2 - x - 12$ then evaluate : **2**
(i) $\alpha^2 + \beta^2$ (ii) $\alpha^3 + \beta^3$

3. Find the quotient $q(x)$ and the remainder $r(x)$ when the polynomial $f(x) = 3x^4 - 16x^3 + 11x^2 + 4x - 3$ is divided by the polynomial $g(x) = x^2 - 5x + 2$. **2**

4. If α and β are the zeroes of the quadratic polynomial $p(x) = x^2 - 5x + 6$, then find a quadratic polynomial whose zeroes are $\frac{\alpha - 1}{\alpha + 1}$ and $\frac{\beta - 1}{\beta + 1}$. **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. Find the value of k for which the system of equations $kx - 4y = 3$; $6x - 12y = 9$ has an infinite number of solutions. **2**

2. Solve for x and y . **2**

$$\frac{5}{x-1} + \frac{1}{y-2} = 2 ; \quad \frac{6}{x-1} - \frac{3}{y-2} = 1$$

3. If three times the larger of two numbers is divided by the smaller one we get 4 as the quotient and 3 as the remainder. Also, if seven times the smaller number is divided by the larger one, we get 5 as the quotient and 1 as the remainder. Find the numbers. **2**

4. A man can row 8 km upstream and 24 km downstream in 4 hours. He can row 12km upstream and 12 km downstream in 4 hours. Find the speed of the man in still water and find speed of the current. **4**

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<p>CBSE X</p> <p>Date :</p>	<p>MT EDUCARE PVT. LTD.</p> <p>Chapter : QUADRATIC EQUATIONS</p> <p>SUBJECT : MATHEMATICS</p>	<p>Marks : 10</p> <p>Time :</p>
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1. Show that the equation $x^2 - 4x + 1 = 0$ has irrational roots. **1**
2. Solve for x : $2\left(\frac{2x-1}{x+3}\right) - 3\left(\frac{x+3}{2x-1}\right) = 5$; given that $x \neq -3, x \neq \frac{1}{2}$. **2**
3. Two numbers differ by 4 and their product is 192. Find the numbers. **3**
4. Solve for x : $9\left(x^2 + \frac{1}{x^2}\right) - 9\left(x + \frac{1}{x}\right) - 52 = 0$; $x \neq 0$. **4**

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<p>CBSE X</p> <p>Date :</p>	<p>MT EDUCARE PVT. LTD.</p> <p>Chapter : ARITHMETIC PROGRESSION</p> <p>SUBJECT : MATHEMATICS</p>	<p>Marks : 10</p> <p>Time :</p>
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1. Find the sum of $(-5) + (-9) + (-13) + \dots + (-245)$ **2**
2. The sum of first 13 terms of an A.P. is 21 and the sum of first 21 terms of this A.P. is 13. Show that the sum of first 34 terms is -34 . **2**
3. A sum of Rs. 700 is to be used to give seven cash prizes to students of a school for their over all academic performance. If each prize is Rs. 20 less than its preceding prize, find the value of each of the prizes. **3**
4. The sum of the third and seventh term of an A.P. is 6 and their product is 8. Find the sum of first sixteen terms of the A.P. **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. Prove that : $\tan 7^\circ \tan 23^\circ \tan 60^\circ \tan 67^\circ \tan 83^\circ = \sqrt{3}$. **1**
2. Prove that : $(1 + \cos A) (1 - \cos A) (1 + \cot^2 A) = 1$. **3**
3. Prove that : $\sin^6 \theta + \cos^6 \theta = 1 - 3\sin^2 \theta \cos^2 \theta$. **3**
4. Prove that : $\sqrt{\frac{1 + \sin \theta}{1 - \sin \theta}} + \sqrt{\frac{1 - \sin \theta}{1 + \sin \theta}} = 2 \sec \theta$. **3**

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CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : APPLICATIONS OF TRIGONOMETRY SUBJECT : MATHEMATICS	Marks : 10 Time :
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1. Find the angle of elevation of the sun when the length of the shadow of a $16\sqrt{3}$ m long pole is 48m. **2**
2. The angle of elevation of the top of a tower from a point on the same level as the foot of a tower is 30° . On advancing 150 metres towards the foot of the tower, the angle of elevation becomes 60° . Show that the height of the tower is 129.9 metres (use $\sqrt{3} = 1.732$) **4**
3. A tree is broken by the wind. The top struck the ground at an angle of 30° and at a distance of 30 metres from the root. Find the whole height of the tree. **4**

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CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : CO-ORDINATE GEOMETRY SUBJECT : MATHEMATICS	Marks : 10 Time :
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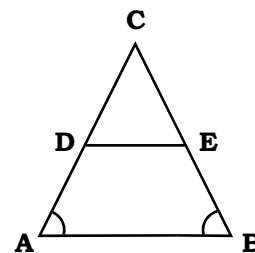
1. Find the value of x if the distance between the points $(x, -1)$ and $(3, 2)$ is 5. **2**
2. Three vertices of a parallelogram taken in order are $(-1, 0)$, $(3, 1)$ and $(2, 2)$ resp. Find the co-ordinates of its fourth vertex. **2**
3. Prove that the points $(3, 0)$, $(6, 4)$ and $(-1, 3)$ are the vertices of an isosceles right angled triangle. **3**
4. Find the area of the quadrilateral whose vertices are taken in order are $(2, 1)$, $(6, 2)$, $(5, 6)$ and $(1, 5)$. **3**

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CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : TRIANGLES SUBJECT : MATHEMATICS	Marks : 10 Time :
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1. The areas of two similar triangle ABC and DEF are 64 cm^2 and 169 cm^2 resp. **2**
 If the length of BC is 4 cm, find the length of EF.

2. In the adj. fig. $DE \parallel AB$, $\angle A = \angle B$. **2**
 Prove that : $AD = BE$



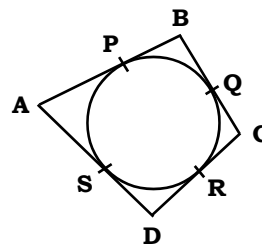
3. D is a point on the side BC of ΔABC such that $\angle ADC = \angle BAC$. Prove that : **3**
 $CA^2 = DC \cdot BC$
4. Prove that : The ratio of areas of two similar triangles is equal to the ratio of **3**
 squares of their corresponding sides.

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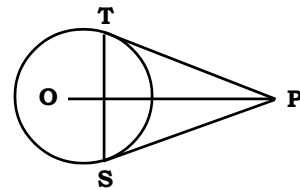
<p>CBSE X</p> <p>Date :</p>	<p>MT EDUCARE PVT. LTD.</p> <p>Chapter : CIRCLES</p> <p>SUBJECT : MATHEMATICS</p>	<p>Marks : 10</p> <p>Time :</p>
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1. Prove that the angle between the two tangents drawn from an external point to a circle is supplementary to the angle subtended by the line segments joining the points of contact to the centre. **2**

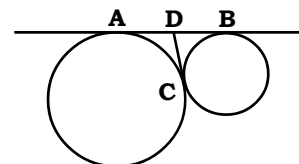
2. A quadrilateral ABCD circumscribes a circle as shown in the adj. fig.
Prove that : $AB + CD = AD + BC$ **2**



3. From a point P, two tangents PT and PS are drawn to a circle with centre O and radius r . If $OP = 2r$, show that ΔTPS is equilateral. **3**



4. In the adj. fig. AB and CD are two common tangents to the two touching circles prove that : (i) D is midpoint of AB
(ii) $\angle ACB = 90^\circ$ **3**



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CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : CONSTRUCTIONS SUBJECT : MATHEMATICS	Marks : 10 Time :
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1. Draw a circle of diameter 8 cm. From a point P, 7 cm away from its centre, construct a pair of tangents to the circle. Measure the lengths of the tangent segments. **2**
2. Construct a ΔPQR in which $PQ = 4$ cm, $QR = 5$ cm and $RP = 6$ cm. Construct a similar triangle each of whose sides is $\frac{5}{3}$ of the corresponding side of ΔPQR . **4**
3. Draw a line segment PQ of length 8 cm. With P as centre and radius 3 cm draw a circle. With Q as centre and radius 3.5 cm draw another circle. From the centre of each circle, draw a tangent to the other circle. **4**

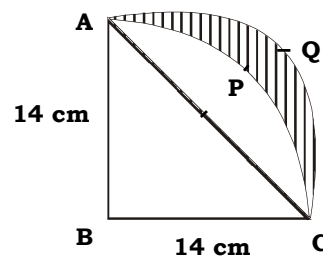
Best of Luck 👍

<p>CBSE X</p> <p>Date :</p>	<p>MT EDUCARE PVT. LTD.</p> <p>Chapter : AREAS RELATED TO CIRCLES</p> <p>SUBJECT : MATHEMATICS</p>	<p>Marks : 10</p> <p>Time :</p>
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1. Find the area of the sector of a circle of radius 17.5 cm, if the length of the arc is 22 cm. 2

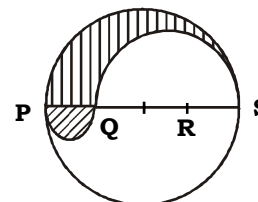
2. A square ABCD is inscribed in a circle of radius r. Find the area of the square. 2

3. In the adj. fig. ABCPA is a quadrant of a circle of radius 14 cm. With AC as diameter, a semicircle is drawn. Find the area of the shaded region.



3

4. PQRS is a diameter of a circle of radius 6 cm. The lengths PQ, QR and RS are equal. Semicircles are drawn with PQ and QS as diameter as shown in the adjoining figure. Find the area of shaded region.
(Take $\pi = 3.14$)



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. A toy is in the form of a cone mounted on a hemisphere of common base radius 7 cm. The total height of the toy is 31 cm. Find the total surface area of the toy. (Use $\pi = \frac{22}{7}$) **2**
2. A bucket is in the form of a frustrum of a cone. Its depth is 15 cm and the diameters of the top and bottom are 56 cm and 42 cm resp. Find how many litres of water can the bucket hold. (Use $\pi = \frac{22}{7}$) **3**
3. A bucket made up of a metal sheet is in the form of a frustum of a cone. Its depth is 24 cm and the diameters of the top and the bottom are 30 cm and 10 cm resp. Find the cost of milk which can completely fill the bucket at the rate of Rs. 20 per litre and the cost of metal sheet used, if it costs Rs. 10 per 100 cm². (Use $\pi = 3.14$) **5**

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

1. The marks (out of 80) obtained by 160 students in an examination are given below. 2

Marks	No. of students
0 - 10	12
10 - 20	20
20 - 30	30
30 - 40	38
40 - 50	24
50 - 60	16
60 - 70	12
70 - 80	8

Prepare cumulative frequency tables of (i) less than type (ii) more than type.

2. The mean of the following frequency distribution is 57.6 and the sum of the observations is 50. Find the missing frequencies f_1 and f_2 . 4

Class	0 - 20	20 - 40	40 - 60	60 - 80	80 - 100	100 - 120
Frequency	7	f_1	12	f_2	8	5

3. The daily profits of 100 shops in a department store are distributed as follows: 4

Profit per shop (cm Rs.)	0 - 100	100 - 200	200 - 300	300 - 400	400 - 500	500 - 600
No. of shops	12	18	27	20	17	6

Estimate the mode for the above data.

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CBSE X Date :	MT EDUCARE PVT. LTD. Chapter : PROBABILITY SUBJECT : MATHEMATICS	Marks : 10 Time :
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1. Two candidates are to be selected from a group of 3 boys and 2 girls. Find the probability that at least one girl is selected. **1**
2. Three coins are tossed simultaneously. Find the probability of getting (i) all heads (ii) at least 2 heads (iii) not more than one head. **3**
3. A bag contains 8 red, 6 white and 4 black balls. A ball is drawn at random from the bag. Find the probability that the drawn ball is –
(i) red or white (ii) not black (iii) neither white nor black **3**
4. A box contains 30 cards numbered from 1 to 30. A card is drawn from the box at random. Find the probability that the number on the drawn card is –
(i) even (ii) prime (iii) multiple of 7 **3**

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