Model Paper -2 (2016-17)
SUMMATIVE ASSESSMENT - 1
CLASS X

MATHEMATICS

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S.No	Topic	VSA (1mark)	Short answer I (2marks)	Short answer II (3marks)	Long Answer (4marks)	TOTAL (90)
1	Number system	2(1)=2	1(2)	1(3)	1(4)	5(11)
2	Algebra		1(2)	3(3)=9	3(4)=12	7(23)
3	Geometry	1(1)	1(2)=2	2(3)=6	2(4)=8	6(17)
4	Trigonometry		2(2)=4	2(3)=6	3(4)=12	7(22)
5	Statistics	1(1)	1(2)=2	2(3)=6	2(4)=8	6(17)
	Total	4	6(12)	10(30)	11(44)	31(90)

Model Paper -2 (2015-16)
SUMMATIVE ASSESSMENT - 1
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MATHEMATICS

Time: 3hrs Max. Marks: 90

General Instruction:-

1. All questions are Compulsory.
2. The question paper consists of 31 questions divided into 4 sections, A,B,C and D. Section – A comprises of 4 questions of 1 mark each. Section-B comprises of 6 questions of 2 marks each. Section C comprises of 10 questions of 3 marks each and Section- D comprises of 11 questions of 4 marks each.
3. Question numbers 1 to 4 in Section are Very Short Answer type Questions to be answered in one word or in one sentence or exact requirement of the question
4. Use of calculator is not permitted.

SECTION A

Questions 1 to 4 carry one mark each.

1. If HCF(120,225)=15, then find the LCM of 120 and 225.

2. Write the condition which should be satisfied by q so that rational number p/q has a terminating decimal expansion.

3.In ΔABC, $AB = 24cm$, $BC = 10cm$ and $AC = 26cm$. *Is this a right triangle? Give reason for your answer.*

4.Write the relation connecting the measures of central tendencies.

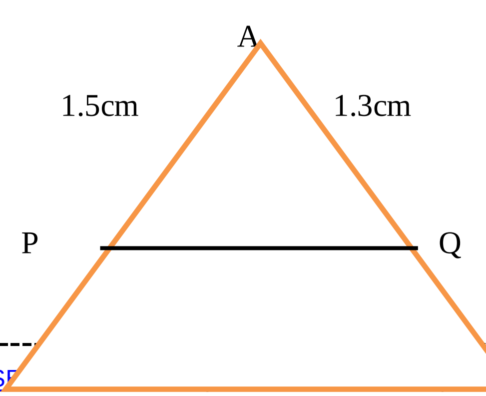
SECTION B

Question 5to 10 carry two marks each.

5. Find H.C.F of 867, 255 using Euclid's division lemma.

6. Find the zeroes of the polynomial $4\sqrt{3}x^2 + 5x - 2\sqrt{3}$.

7.In figure PQ ||BC find QC



3cm

B	C

8. If Sec4A = Cosec (A-20°) where 4A is an acute angle, find the value of A.

9. Simplify $\sin\theta\left\{\frac{1}{\sin\theta}-\frac{1}{\text{cosec}\theta}\right\}$

10. Find the Mean of first five odd multiples of 5?

Section C

***Question 11 to 20 carry three marks each*.**

11.Prove that $\sqrt{3}$ is an irrational Number.

12. Find the zeroes of quadratic polynomial x^2-2x-8 and verify the relationship between the zeroes and their co-efficient.

13. For what value of k will the following system of linear equations has no solution?

$3x+y=1$

$(2k-1)x+(k-1)y=2k+1$

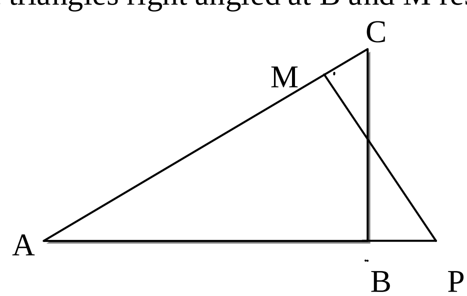
14. Evaluate: $(\text{Sin } 47^0/\text{Cos } 43^0)^2 + (\text{Cos } 43^0/\text{Sin } 47^0)^2 - 4\text{Cos}^2 45^0$

15. A fraction becomes 1/3 when 1 is subtracted from the numerator and it becomes $\frac{1}{4}$ when 8 is added to its denominator. Find the fraction.

16. In fig ΔABC andΔAMP are two right triangles right angled at B and M respectively Prove that

(i) ΔABC~ ΔAMP

(ii) $\frac{CA}{PA} = \frac{BC}{MP}$



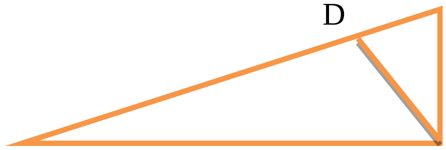
17. Prove that

$\sqrt{\frac{1+\text{Sin}\,A}{1-\text{Sin}\,A}}$= Sec A + tan A

18. The distribution below gives the weights of 30 students of a class. Find the median weight of the students

Weight in Kg	40-45	45-50	50-55	55-60	60-65	65-70	70-75
No. of students	2	3	8	6	6	3	2

19.In fig if AD⊥ BC prove that $AB^2+CD^2 = BD^2 + AC^2$



20. If the mean of the following distribution is 54.Find the value of p :

Class	0-20	20-40	40-60	60-80	80-100
frequency	7	p	10	9	13

Section D

(Q. No. 21 to Q. No. 31carry 4 marks each)

21. Obtain all other zeroes of $3x^4+6x^3-2x^2-10x-5$, if two of its zeros are √5/3 and - √5/3

22. Prove that the ratio of the areas of two similar triangles is equal to the ratio of the squares of their corresponding sides.

23. Draw the graphs of 2x+y=6 and 2x – y = 2.Shade the region bounded by these lines and x- axis. Find the area of the shaded region.

24. Prove that

$$\frac{\tan\theta+\sec\theta-1}{\tan\theta-\sec\theta+1}=\frac{1+\sin\theta}{\cos\theta}$$

25.The following distribution gives the daily income of 50 workers of a factory

Daily in come	100-120	120-140	140-160	160-180	180-200
Number of workers	12	14	8	6	10

Convert the distribution above to a less than type cumulative frequency distribution and draw itsOgive.

26. Without using trigonometric tables evaluate

$$\left(\frac{3cos43°}{sin47°}\right)^2 - \frac{cos37°cosec53°}{tan5°tan25°tan45°tan65°tan85°}.$$

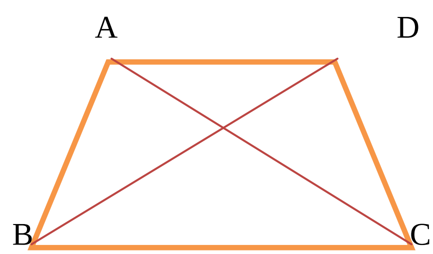
27. In a school students thought of planting trees in and around the school campus to reduce air ands noise pollution. They planted two types of trees type A & type B . The total number of trees planted are 25 and sum of type A and twice the number of type B trees is 40. Find the number of each type of trees planted. What values can be imparted by planting trees.

28. Prove that

$(Sin\varnothing+Cosec\ \varnothing)^2 + (Cos\ \varnothing + Sec\varnothing)^2 = 7 + Tan^2\varnothing + Cot^2\varnothing$

29. In fig Δ ABC and Δ DBC are two triangles on the same base BC. If AD intersects BC at O. Show that

Area (Δ ABC)/Area (ΔDBC) = AO/DO



30. The mean of the following frequency table is 50. Find the missing frequencies

Class	0-20	20-40	40-60	60-80	80-100	Total
Frequency	17	f_1	32	f_2	19	120

31. Prove that the square of any positive integer is of the form 3m or 3m+1 for some integer m.

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Marking Scheme

SECTION- A

Ques.1 LCM x HCF= Product of two numbers

$\Rightarrow LCM \times 15 = 120 \times 25$

$\Rightarrow LCM = \dfrac{120 \times 225}{15} = 1800$

Ques2.q must be of the form $2^n 5^m$

Ques.3

$Here, AB^2 = (24)^2 = 576, BC^2 = (10)^2 = 100$

$and\ AC^2 = (26)^2 = 676$

$So\ AC^2 = AB^2 + BC^2$

$Hence, the given \Delta ABC is a right triangle$

Ques4Mode= 3 Median-2 Mean

SECTION- B

Ques.5 867 = 255 x 3 + 102 [By using Euclid division lemma]
225 = 102 x 2 + 51 (1marks)
102 = 51x 2 + 0 (1marks)
Therefore HCF of 867 and 255 is 51

Ques.6 $4\sqrt{3}x^2 + 5x - 2\sqrt{3}$

Product $= 4\sqrt{3} \times 2\sqrt{3} = 24$ (1marks)

Sum = 5

We have $F(x) = 4\sqrt{3}x^2 + 8x - 3x - 2\sqrt{3}$

$F(x) = 4x(\sqrt{3}x + 2) - \sqrt{3}(\sqrt{3}x + 2)$

$F(x) = (\sqrt{3}x + 2)(4x - \sqrt{3})$

Zeroes of f[x] is given by

If F (x) = 0

$(\sqrt{3}x + 2)(4x - \sqrt{3}) = 0$

$(\sqrt{3}x + 2) = 0 \text{ and } 4x - \sqrt{3} = 0$ (1marks)

$x = \frac{-2}{\sqrt{3}}$ $x = \frac{-\sqrt{3}}{4}$

Hence Zeroes of f (x) is α	$= \frac{-2}{\sqrt{3}}$ and $\beta = \frac{\sqrt{3}}{4}$

Ques.7 Since PQ || BC

Therefore By using Basic Proportionality Theorem

$$\frac{AP}{PB} = \frac{AQ}{QC}$$ (1marks)

$$\frac{1.5}{3} = \frac{1.3}{QC}$$ (1marks)

QC = 2.6cm.

Ques.8 $\sec 4A = \text{cosec}\,(A - 20^0)$

$\sec 4A = \sec [\,90^0 - (A - 20^0)\,]$ (1marks)

$\sec 4A = \sec (110^0 - A)$

$$4A = 110^0 - A$$ (1marks)

$$A = \frac{110}{5}$$

$$A = 22^0$$

Ques. 9 $\sin\theta \times \frac{1}{\sin\theta} - \sin\theta \times \frac{1}{\text{cosec}\theta}$ (1marks)

$= 1 - \sin\theta \times \sin\theta = 1 - \sin^2\theta = Cos^2\,\theta$ (1marks)

Ques.10 First five odd multiple of 5 are

5, 15, 25, 35, 45 (1marks)

$$\text{Mean} = \frac{5+15+25+35+45}{5}$$ (1marks)

$$= \frac{125}{5}$$

$$= 25$$

Section- C

Ques.11

Let $\sqrt{3}$ b e a Rational no.

Therefore $\sqrt{3} = \frac{p}{q}$ {where p, q are integers and q ≠o}

$3 = \frac{p2}{q2}$

⇒ $3q^2 = p^2$ (1marks)

⇒3 divides p^2⇒3 divides p……1)

putting p= 3r [from some integer]

⇒$3q^2 = (3r)^2 = 9r^2$ (1marks)

⇒$q^2 = 3r^2$

3 divides q^2⇒3 divides q …..(2) (1marks)

From eqn. 1 &2, 3 is a common factor of p & q which contradicts the fact that p & q are coprime.So our assumption is wrong

$\therefore \sqrt{3} is\ \ an\ \ irrational\ no.$

Ques.12 We have $f(x) = x^2 – 2x – 8$

$= x^2 – 4x + 2x – 8$

$= x(x – 4) + 2(x – 4)$

$= (x - 4)(x + 2)$ (1/2marks)

Zeroes of f(x) isf(x) = 0

(x + 2)=0and (x – 4)=0

x + 2 = 0 and x – 4 = 0

x = -2 and x = 4 (1/2marks)

Therefore Zeroes of f(x) is $\alpha = -2 , \beta = 4$

Sum of zeroes = $\alpha + \beta$ = -2 + 4 = 2 (1/2marks)

And $\frac{cofficientofx}{cofficientofx2} = \frac{-(-2)}{1} = 2$

Product of zeroes = $\alpha\beta$ = (-2)4 = -8 (1/2marks)

And $\frac{constant\ term}{cofficientofx2} = \frac{-8}{1} = -8$

Ques.13 Here $a_1 = 3 b_1 = 1$ $c_1 = 1$

$a_2 = (2k – 1)$ $b_2 = (k – 1)$ $c_2 = (2k + 1)$ (1/2marks)

For no solution

$$\frac{a1}{a2} = \frac{b1}{b2} \neq \frac{c1}{c2}$$ (1/2marks)

$$\frac{3}{2k-1} = \frac{1}{k-1} \neq \frac{1}{2k+1}$$ (1/2marks)

$$\frac{3}{2k-1} = \frac{1}{k-1} \& \frac{1}{k-1} \neq \frac{1}{2k+1}$$

3k - 3 = 2k - 1 , 2k + 1 ≠ k – 1 (1/2marks)

3k - 2k = -1 +3 , 2k – k ≠ -1 -1

K = 2 , k≠ 2

Hence the given system of equations will have no solution if k = 2.(1marks)

Ques.14 $\{\frac{\sin 47}{\cos(90-47)}\}^2 + \{\frac{\sin(90-47)}{\sin 47}\}^2 - 4 \text{ x } (\frac{1}{\sqrt{2}})^2$ (1marks)

$= \{\frac{\sin 47}{\sin 47}\}^2 + \{\frac{\sin 47}{\sin 47}\}^2 - 4(\frac{1}{\sqrt{2}})^2$ (1marks)

$= 1 + 1 - 4 \text{ x } \frac{1}{2}$

= 2 – 2

= 0 (1marks)

Ques.15 Let the numerator be x and denominator be y, Fraction = $\frac{x}{y}$

According to given condition

$\frac{x-1}{y} = \frac{1}{3}$ And $\frac{x}{y+8} = \frac{1}{4}$ (1marks)

$$\frac{x-1}{y} = \frac{1}{3}$$

3x – 3 = y

3x – y = 3 - (1)

And $\frac{x}{y+8} = \frac{1}{4}$

$4x - y = 8$ - (2) (1 marks)

Subtracting eqn. (1)from eqn. (2)

$4x - y = 8$

$3x - y = 3$

$x = 5$

On putting the value of x in equation (1)

$3 \times 5 - y = 3$

$15 - y = 3$

$y = 12$

Therefore fraction is = $\frac{5}{12}$ (1marks)

Ques.16 (1) In triangle ABC and AMP we have

$\angle ABC = \angle AMP$ = 90^0(each)

$\angle A = \angle A$ (common) (1marks)

Therefore AA Criterion of similarity

$\triangle ABC \sim \triangle AMP$

(2) $\triangle ABC \sim \triangle AMP$ (1marks)

$\Rightarrow \frac{CA}{AP} = \frac{BC}{MP} By\ BPT$

$\Rightarrow \frac{CA}{PA} = \frac{BC}{MP}$ (1marks)

Ques.17 L.H.S= $\sqrt{\frac{1+\sin A}{1-\sin A}} \times \sqrt{\frac{1+\sin A}{1+\sin A}}$ (1marks)

$= \sqrt{\frac{(1+\sin A)^2}{1-\sin^2 A}} = \frac{1+\sin A}{CosA} = \frac{1}{CosA} + \frac{SinA}{CosA}$ (1marks)

= $\sec A + \tan A$= R.H.S (1 marks) $= SecA + \tan A$

Ques.18 Marks Frequency C.F

40 – 45	2	2	
45 – 50	3	3+2 = 5	
50 – 55	8	5+8= 13	
55 – 60	6	13+6= 19	
60 – 65	6	19+6= 25	
65 – 70	3	25+3= 28	
70 – 75	2	28+2= 30	(1marks)

N=30, $\frac{N}{2} = 15$, l = 30, f= 3, h= 5

Median = $l + \left[\frac{\frac{n}{2} - cf}{f}\right] \times h$ (1marks)

$= 50 + \frac{15-3}{8} \text{ x } 5 \quad = 50 + \frac{12}{8} \text{x } 5$

$= 50 + \frac{15}{2} = \frac{115}{2}$ (1marks)

Ques.19 In ΔADC we have

$AC^2 = AD^2 + CD^2$ (By Pythagoras theorem)-(1) (1marks)

In $\Delta ADBwehave$

$AB^2 = AD^2 + BD^2$ (By Pythagoras theorem)–(2) (1marks)

(2) - (1)

$AB^2 – AC^2 = BD^2 – CD^2$

$\Rightarrow AB^2 – CD^2 = BD^2 + AC^2$ Hence proved. (1marks)

Ques.20	Class	Mid value(xi)	fi ui = $\frac{xi-a}{h}$		fiui	
	0 – 20	10	7	-2	-14	
	20 – 40	30	p	-1	-p	
	40 – 60	50	10	0	0	
	60 – 80	70	09	1	9	
	80 – 100	90	13	2	26	(2marks)

$\Sigma fi = 39 + p$ $\Sigma fiui = 21 - p$

Mean = a + h $(\frac{\Sigma fiui}{\Sigma fi})$

$54 = 50 + 20\ (\frac{21-p}{39+p})$

P=11 (1marks)

SECTION - D

Ques.21 Since $\sqrt{\frac{5}{3}}$ and $-\sqrt{\frac{5}{3}}$ are two zeroes of f(x)

$\therefore \left(x - \sqrt{\frac{5}{3}}\right)(x + \sqrt{\frac{5}{3}}) = x^2 - \frac{5}{2}$ is a factor of (2marks)

$\Rightarrow 3x^2 - 5$ is a factor of p(x)

$3x+6x-2x-10x-5 = (x+\sqrt{\frac{5}{3}})\ (n-\sqrt{\frac{5}{3}})(n+1)(n+1)$

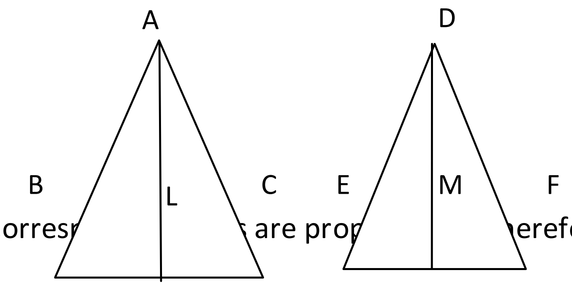
$\therefore zeroes\ of\ p(x) are\ \sqrt{\frac{5}{3}}, -\sqrt{\frac{5}{3}}, -1, -1$ (2marks)

Ques22.Given two Triangles ΔABC and ΔDEF such that ΔABC is similar to ΔDEF

To prove	CBSEGuess.com

$$\frac{\Delta ABC}{\Delta DEF} = \frac{AB^2}{DE^2} = \frac{BC^2}{EF^2} = \frac{AC^2}{DF^2}$$

Construction :Draw $AL; \perp BC \text{ and } DM \perp EF$



(2marks)

Proof Since, similar triangles are equiangular and their corresp ... are prop ... herefore,

ΔABC is similar to ΔDEF

∠A =∠ D, ∠B = ∠E, ∠C = ∠F

$$\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$$ ……………………………………………………………(I)

Thus, in ΔALB and ΔDME

∠ALB = ∠ DME (each 90°)

∠B = ∠E (from eq.(1)

By AA similarity, ΔALB is similar ΔDME

$$\frac{AL}{DM} = \frac{AB}{DE}$$ ………………………………………………………………(2)

From eq. (1) and (2), we get

$$\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF} = \frac{AL}{DM}$$ ……………………………………………(3)

$$\frac{ar\Delta ABC}{ar\Delta DEF} = \frac{\frac{1}{2} \times BC \times AL}{\frac{1}{2} \times EF \times DM}$$ (1marks)

$$\frac{ar\Delta ABC}{ar\Delta DEF} = \frac{BC \times AL}{EF \times DM}$$

As $\frac{BC}{EF} = \frac{AL}{DM}$ { fromeqn…………(3)

$$\frac{ar\Delta ABC}{ar\Delta DEF} = \frac{BC^2}{EF^2} \text{ ……………………………………….(4)}$$

But $\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$ ………………………………………….(5)

(by similarity of ΔABC and ΔDEF) (1marks)

Therefore eq. (4) and (5), we get

$$\frac{ar\Delta ABC}{ar\Delta DEF} = \frac{BC^2}{EF^2} = \frac{AB^2}{DE^2} = \frac{AC^2}{DF^2}$$

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x	0	1	2
y	6	4	2

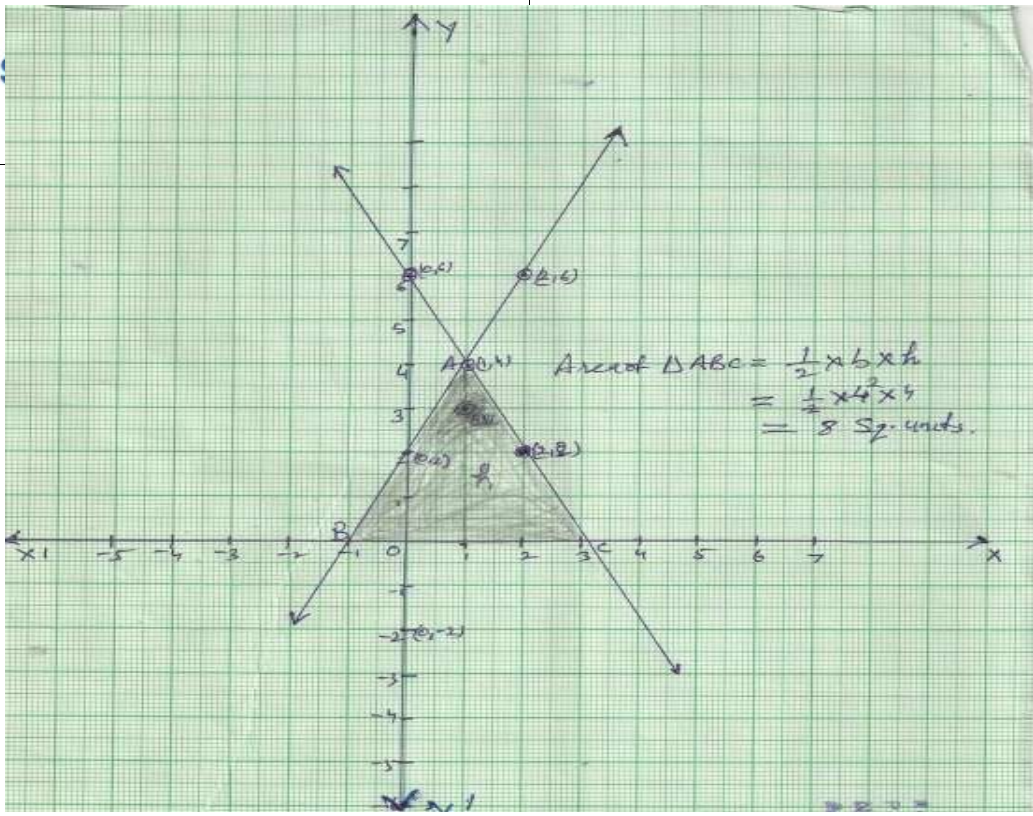
Ques.23 2x+y = 6

Y = 6 – 2x

2x-y = -2

x	0	1	2
y	2	3	6

y = 2x+ 2 (1 mark)



(2 mark)

Draw graph and then find the Area of shaded region (1 mark)

Ques.24 L.H.S $= \frac{\tan\theta - \sec\theta - 1}{\tan\theta - \sec\theta + 1}$

$= \frac{\tan + \sec\theta - (sec^2\theta - tan^2\theta)}{\tan\theta - \sec\theta + 1}$ (1 mark)

$= \frac{(\tan\theta + \sec\theta) - (\sec\theta - \tan\theta)(\sec\theta + \tan\theta)}{\tan\theta - \sec\theta + 1}$ $= \frac{(\tan\theta + \sec\theta)(1 - \sec\theta + \tan\theta)}{\tan\theta - \sec\theta + 1}$ (2 mark)

$\tan\theta + \sec\theta = \frac{\sin\theta}{\cos\theta} + \frac{1}{\cos\theta}$ (1 mark)

$= = \frac{\sin\theta + 1}{\cos\theta}$

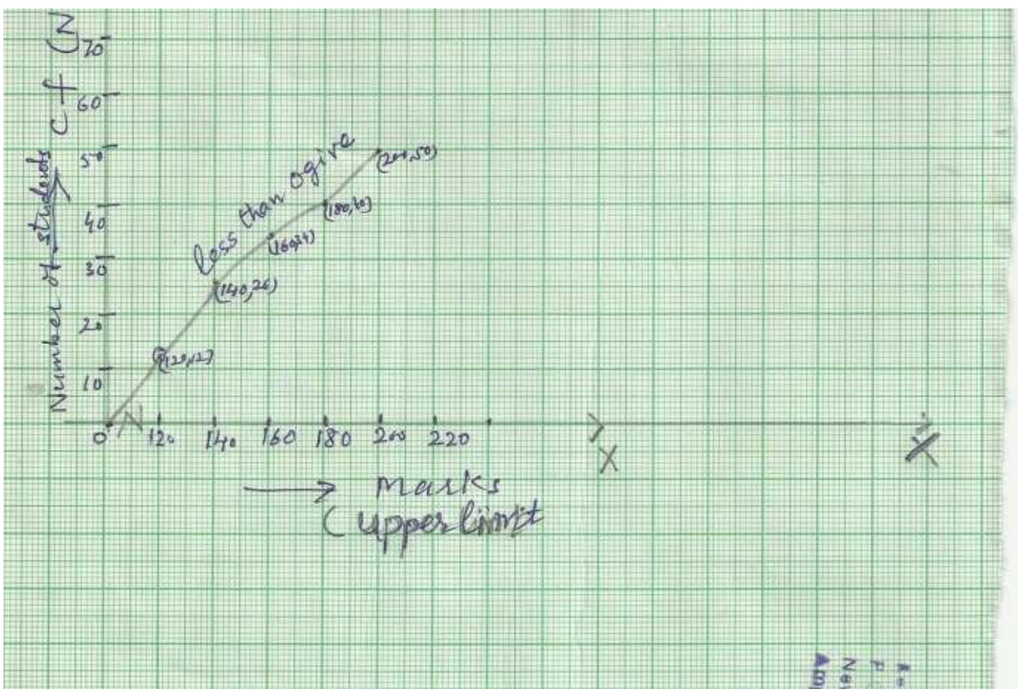
= R.H.S

Ques.25

Marks	No .of Students	Marks less than	C.F
100-120	12	120	12
120-140	14	140	26
140-160	8	160	34
160-180	6	180	40
180-200	10	200	50

(2 mark)

Cumulative frequency curve



(2 mark)

Ques.26

$$\left(\frac{3\cos 43^0}{\sin 47^0}\right)^2 - \frac{\cos 37^0 \operatorname{cos}ec 53^0}{\tan 5^0 \tan 25^0 \tan 45^0 \tan 65^0 \tan 85^0}$$ (1 mark)

$$=\left(\frac{3\cos(90-47^0)}{\sin 47^0}\right)^2-\frac{\cos(90^0-53^0)\operatorname{cos}ec53^0}{\tan(90^0-85^0)\tan 25^0\tan 45^0\tan(90^0-25^0)\tan 85^0}$$

$$=\left(\frac{3\cos(90-47^0)}{\sin 47^0}\right)^2-\frac{\cos(90^0-53^0)\operatorname{cos}ec53^0}{\tan(90^0-85^0)\tan 25^0\tan 45^0\tan(90^0-25^0)\tan 85^0}$$ (1 mark)

$$=\left(\frac{3\cos(90-47^0)}{\sin 47^0}\right)^2-\frac{\sin 53^0\operatorname{cos}ec53^0}{\cot 85^0\tan 25^0\tan 45^0\cot 25^0\tan 85^0}$$ (1 mark)

$$=\left(\frac{3\sin 47^0}{\sin 47^0}\right)^2-\frac{\sin 53^0\frac{1}{\sin 53^0}}{\frac{1}{\tan 25^0}\tan 25^0\times 1\times\frac{1}{\tan 25^0}\tan 85^0}$$

$$=(3\times 1)^2-\frac{1}{1\times 1\times 1}$$ $\{\because \tan 45^0=1\}$

=9-1

=8

(1 mark)

Ques.27

Let x ,y be the number of type A and type B trees

According to the question

x+ y=25……………………………………………………….(i)

x+2y =40……………………………………………………..(ii) (1 mark)

Subtracting (ii) from (i)

Y=15 (1 mark)

Putting this value of y in eqn. (i)

X=10 (1 mark)

No. of type A trees = 10

No of type B trees=15

By involving students in such acts values like environmental consciousness and social responsibilities are infused among them. (1 mark)

Ques.28 L.H.S $= \sin^2\phi + Cosec^2\phi + 2\sin\phi Cosec\phi + Cos^2\phi + Sec^2\phi + 2Cos\phi Sec\phi$

$As\ we\ know\ that$ $\sin^2\phi + \cos^2\phi = 1$

(2 mark)

$$Cosec^2\phi = 1 + \cot^2\phi$$

$$Sec^2\phi = 1 + \tan^2\phi$$

$$\therefore 1 + 1 + Cot^2\phi + 2 + 1 + \tan^2\phi + 2 = 7 + \tan^2\phi + Cot^2\phi$$ (2 mark)

$= R.H.S$

Ques.29 Draw AL⊥BC and DM⊥BC (1 1/2 mark)

$\therefore \frac{AL}{DM} = \frac{AO}{DO}$ (Corresponding sides are proportional)

$\frac{ar(\Delta ABC)}{ar(\Delta DBC)} = \frac{\frac{1}{2} X BC X AL}{\frac{1}{2} X BC X DM}$ (1 1/2 mark)

$\frac{ar(\Delta ABC)}{ar(\Delta ABC)} = \frac{AO}{DO}$

$\frac{AL}{DM} = \frac{AO}{DO}$ (1mark)

Ques.30

Class	f_i	x_i	$u_i = \frac{xi-a}{h}$	$f_i\ u_i$
0-20	17	10	$\frac{10-50}{20}$ = -2	-34
20-40	f_1	30	$\frac{30-50}{20}$ = -1	$-f_1$
40-60	32	50	0	0
60-80	f_2	70	$\frac{70-50}{20}$ = 1	f_2
80-100	19	90	$\frac{90-50}{20}$ = 2	38

(2mark)

$f_1 + f_2 = 52$ - (1)

$$\text{Mean} = a + h\frac{\Sigma fiui}{\Sigma fi}$$

$$50 = 50+20(\frac{4-f1+f2)}{120}$$

$f_1 - f_2 = 4$ - (2)

$f_1 = 28$ (1mark)

$f_2 = 24$ (1mark)

31.

Let x be any positive integer and b=3.

According to **Euclid's division lemma**, we can say that

$x=3q+r, 0 \le r < 3$ (1/2mark)

Therefore, all possible values of **x** are:

$x=3q,(3q+1)$ or $(3q+2)$ (1/2mark)

Now lets square each one of them one by one.

(i) $(3q)^2=9q^2$ (1mark)

Let $m=3q^2$ be some integer, we get $9q^2=3\times 3q^2=3m$

(ii) $(3q+1)^2=9q^2+6q+1=3(3q^2+2q)+1$

Let $m=3q^2+2q$ be some integer, we get

$(3q+1)^2=3m+1$ (1mark)

(iii) $(3q+2)^2=9q^2+4+12q=9q^2+12q+3+1=3(3q^2+4q+1)+1$

Let $m=(3q^2+4q+1)$ be some integer, we get

$(3q+2)^2=3m+1$

Hence, square of any positive integer is either of the form 3m or 3m+1 for some integer m.(1mark)

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