BK BIRLA CENTRE FOR EDUCATION

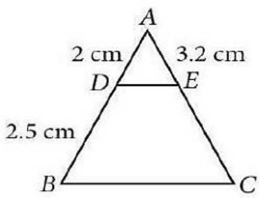
SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY|CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL

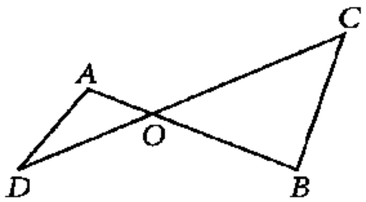
PRE-BOARD 1 EXAMINATION 2024-25
MARKING KEY
MATHEMATICS (041)

Class: X Date: 20 /11/24	Duration: 3 Hrs Max. Marks: 80
Name:	Exam RNo:

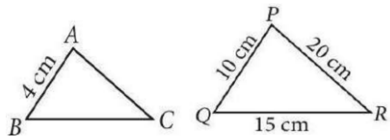
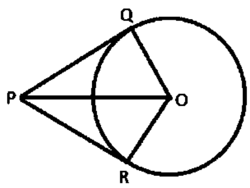
General Instructions:
1. This Question Paper has 5 Sections A, B, C, D and E.
2. Section A has 20 MCQs carrying 1 mark each
3. Section B has 5 questions carrying 02 marks each.
4. Section C has 6 questions carrying 03 marks each.
5. Section D has 4 questions carrying 05 marks each.
6. Section E has 3 case-based integrated units of assessment (04 marks each) with sub-parts.
7. All Questions are compulsory. However, an internal choice in 2 Qs of 5 marks, 2 Qs of 3 marks and 2 Questions of 2 marks have been provided. An internal choice has been provided in the 2marks questions of Section E
8. Draw neat figures wherever required. Take π =22/7 wherever required if not stated.

<u>SECTION A</u>

1.	If a pair of linear equations in two variables is inconsistent, then the lines represented by two equations are				1m
	(a) intersecting	**(b) parallel**	(c) always coincident	(d) none of these	
2.	The distance of the point $(5, -4)$ from x -axis is				1m
	(a) 5 units	**(b) 4 units**	(c) 1 unit	(d) none of these	
3.	In the given figure, $DE \parallel BC$, $AD = 2$ cm, $BD = 2.5$ cm and $AE = 3.2$ cm, then AC is equal to 				1m
	(a) 2.4cm	(b) 3cm	(c) 4cm	**(d) none of these**	
4.	$(\cos^4 x - \sin^4 x)$ is equal to				1m
	(a) $2\sin^2 x - 1$	(b) $1 - 2\cos^2 x$	(c) $\sin^2 x - \cos^2 x$	**(d) $2\cos^2 x - 1$**	
5.	If probability of success is 0.9%, then probability of failure is				1m
	(a) 0.01 %	(b) 0.1%	**(c) 99.1%**	(d) none of these	
6.	If 1 is a zero of the polynomial $p(x) = ax^2 - 3(a-1)x - 1$, then find the value of a.				1m
	(a) 1	(b) 2	(c) -1	(d) none of these	
7.	If P is a point on x -axis such that its distance from the origin is 3 units, then the coordinates of a point P are				1m
	(a) (3,0)	(b) (0,3)	(c) (0.-3)	(d) none of these	

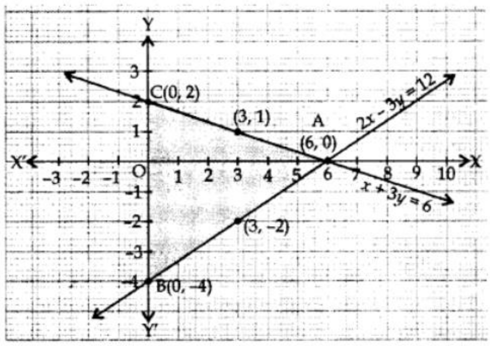
8.	In a single throw of a pair of dice, the probability of getting the sum as a perfect square is				1m
	(a) 7/36	(b) 5/36	(c) 8/36	(d) none of these	
9.	Determine k for which the system of equations has infinite solutions: $4x + y = 3$ and $8x + 2y = 5k$.				1m
	(a) 5/6	**(b) 6/5**	(c)4/5	(d) none of these	
10.	$5\sin^2 30^0 + \cos^2 45^0 - 4\tan^2 30^0$ is equal to				1m
	(a) 5/6	(b) 2/3	**(c) 5/12**	(d) none of these	
11.	The sum $(-6) + (0) + (6) + \cdots$. up to 13th term is				1m
	(a) 390	(b) 1380	(c) 378	(d) none of these	
12.	From a point Q , the length of the tangent to a circle is 12 cm and the distance of Q from the centre is 15 cm. The radius of the circle is				1m
	(a) 9 cm	(b) 12 cm	(c) 15 cm	(d) none of these	
13	The mean of first ten odd natural numbers is				1m
	(a) 5	**(b) 10**	(c) 19	(d) none of these	
14	If LCM of a and 18 is 36 and HCF of a and 18 is 2 , then $a =$				1m
	(a) 2	(b) 3	**(c) 4**	(d) none of these	
15	In the given figure, $OA = 4$ cm, $OB = 6$ cm, $OD = 5$ cm and $OC = 7.5$ cm, then by which of the following similarity criterion $\triangle AOD \sim \triangle BOC$? 				1m
	(a) AA	(b) SSS	**(c) SAS**	(d) none of these	
16	The roots of the equation $f(x) = x^2 - 2\sqrt{2}x - 16$ are				1m
	(a) $4\sqrt{2}, -2\sqrt{2}$	(b) - $4\sqrt{2}, -2\sqrt{2}$	(c) - $4\sqrt{2}, 2\sqrt{2}$	(d) none of these	
17	The area of a circle is 38.5 cm^2 .The circumference of the circle is				1m
	(a) 6.2 cm	(b) 12.1 cm	**(c) 22 cm**	(d) none of these	
18	The volume of two spheres are in ratio 64:27, then ratio of their areas is				1m
	(a) 8 : 9	**(b) 16 : 9**	(c) 8 : 3	(d) none of these	
19	Assertion: The curved surface area of a cone of base radius 3 cm and height 4 cm is 15 π cm^2 Reason: Volume of cone = $\pi r^2 h$				1m
	(a) Both Assertion (A) and Reason (R) are the true and Reason (R) is a correct explanation of Assertion (A). (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A). **(c) Assertion (A) is true and Reason (R) is false.** (d) Assertion (A) is false and Reason (R) is true.				
20	Assertion : 5 + 13 + 21 + … +181 = 2239 Reason : Sum of n terms in an A.P is $n(a+a_n)/2$				1m
	(a) Both Assertion (A) and Reason (R) are the true and Reason (R) is a correct explanation of Assertion (A). (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A).				

	(c) Assertion (A) is true and Reason (R) is false. **(d) Assertion (A) is false and Reason (R) is true.**	
	SECTION B	
21	Prove that $3 + 2\sqrt{3}$ is an irrational number.	2m
	OR	
	Prove that $\sqrt{3}$ is irrational.	
A:-	Let us assume to the contrary, that $3 + 2\sqrt{3}$ is rational. So that we can find integers a and b ($b \neq 0$). Such that $3 + 2\sqrt{3} = \frac{a}{b}$, where a and b are coprime. Rearranging the equations, we get $2\sqrt{3} = \frac{a}{b} - 3 = \frac{a-3b}{b}$ $\sqrt{3} = \frac{a-3b}{2b} = \frac{a}{2b} - \frac{3b}{2b}$ $\sqrt{3} = \frac{a}{2b} - \frac{3}{2}$ Since a and b are integers, we get $\frac{a}{2b} - \frac{3}{2}$ is rational and so $\sqrt{3}$ is rational. But this contradicts the fact that $\sqrt{3}$ is irrational. So we conclude that $3 + 2\sqrt{3}$ is irrational.	1m 1m
22	If $\sin\alpha = 1/2$, then show that $(3\cos\alpha - 4\cos^3\alpha) = 0$.	2m
A:-	Consider a $\triangle ABC$ in which $\angle B = 90^\circ$ and $\angle BAC = \alpha$. $\therefore \sin\alpha = \frac{BC}{AC} = \frac{1}{2}$ Let $BC = k$ units and $AC = 2k$ units, where k is a positive number. By Pythagoras theorem, we have $AC^2 = AB^2 + BC^2$ $\Rightarrow AB^2 = AC^2 - BC^2 = 4k^2 - k^2 = 3k^2$ $\Rightarrow AB = \sqrt{3}k$ units $\therefore \cos\alpha = \frac{AB}{AC} = \frac{\sqrt{3}k}{2k} = \frac{\sqrt{3}}{2}$ Now, L.H.S. $= (3\cos\alpha - 4\cos^3\alpha) = \frac{3\sqrt{3}}{2} - 4 \times \frac{3\sqrt{3}}{8} = 0 =$ R.H.S.	1m 1m
23	If $\triangle ABC \sim \triangle PQR$, $AB = 4$ cm, $PQ = 10$ cm, $QR = 15$ cm, $PR = 20$ cm, then find the perimeter of $\triangle ABC$. OR In $\triangle DEF$, $AB \parallel EF$ such that $AD = 6$ cm, $AE = 18$ cm and $BF = 24$ cm. Find the length of DB.	2m

A:-	Given, $\triangle ABC \sim \triangle PQR$ with $AB = 4$ cm and $PQ = 10$ cm Since, $\triangle ABC \sim \triangle PQR$ $\therefore \frac{AB}{PQ} = \frac{BC}{QR} = \frac{AC}{PR}$ $\Rightarrow \frac{4}{10} = \frac{BC}{15} = \frac{AC}{20}$  $\Rightarrow BC = \frac{4 \times 15}{10} = 6$ cm and $AC = \frac{4 \times 20}{10} = 8$ cm $\therefore$ Perimeter of $\triangle ABC = AB + BC + AC$ $= 4 + 6 + 8 = 18$ cm Hence, perimeter of $\triangle ABC$ is 18 cm.	1m 1m
24	Prove that lengths of tangents from an external point to the circle are equal.	2m
A:-	 ∠OQP and ∠ORP are right angles, because these are angles between the radii and tangents, Now in right triangles △ OQP and △ ORP, OQ = OR (Radii of the same circle) OP = OP (Common) Therefore, △ OQP ≅△ ORP (RHS) This gives PQ = PR	1m 1m
25	If α and β are zereos of the polynomial $2x^2 - 5x + 7$, then find the value of $\alpha^{-1} + \beta^{-1}$.	2m
A:-	Here $p(x) = 2x^2 - 5x + 7$ α, β are zeroes of p(x) $\Rightarrow \alpha + \beta = \frac{-(-5)}{2} = \frac{5}{2}$ and $\alpha\beta = \frac{7}{2}$ $\therefore \alpha^{-1} + \beta^{-1} = \frac{1}{\alpha} + \frac{1}{\beta} = \frac{\beta + \alpha}{\alpha\beta} = \frac{5/2}{7/2} = \frac{5}{7}$	1m 1m
	<u>SECTION C</u>	
26	In a school, there are two Sections A and B of class X. There are 48 students in Section A and 60 students in Section B. Determine the least number of books required for the library of the school so that the books can be distributed equally among all students of each section.	3m

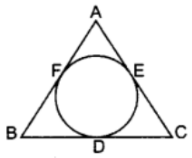
<table>
<tr><td>A:-</td><td>Since the books are to be distributed equally among the students of Section A and Section B. therefore, the number of books must be a multiple of 48 as well as 60.
Hence, required num¬ber of books is the LCM of 48 and 60.
$48 = 2^4 \times 3$
$60 = 2^2 \times 3 \times 5$
LCM = $2^4 \times 3 \times 5 = 16 \times 15 = 240$
Hence, required number of books is 240.
$\begin{array}{r|l} 2 & 48 \\ \hline 2 & 24 \\ \hline 2 & 12 \\ \hline 2 & 6 \\ \hline & 3 \end{array}$ $\begin{array}{r|l} 2 & 60 \\ \hline 2 & 30 \\ \hline 3 & 15 \\ \hline & 5 \end{array}$</td><td>1m

2m</td></tr>
<tr><td>27</td><td>Represent the following pair of equations graphically and write the coordinates of points where the lines intersect y-axis.
x + 3y = 6 and 2x – 3y = 12</td><td>3m</td></tr>
<tr><td>A:-</td><td>$x + 3y = 6$
$\Rightarrow x = 6 - 3y$
<table><tr><td>x</td><td>6</td><td>3</td><td>0</td></tr><tr><td>y</td><td>0</td><td>1</td><td>2</td></tr></table>(6, 0), (3, 1), (0, 2)

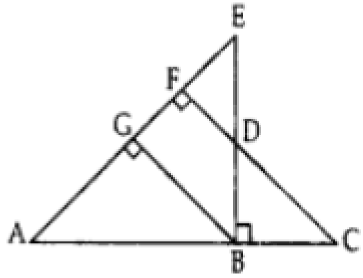
$2x - 3y = 12$
$\Rightarrow 2x = 12 + 3y$
$\Rightarrow x = \frac{12 + 3y}{2}$
<table><tr><td>x</td><td>0</td><td>6</td><td>3</td></tr><tr><td>y</td><td>–4</td><td>0</td><td>-2</td></tr></table>(0, –4), (6, 0), (3, 2)
</td><td>1m

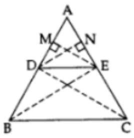
2m</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>28</td><td>Prove that:
$$\frac{\sin\theta - \cos\theta}{\sin\theta + \cos\theta} + \frac{\sin\theta + \cos\theta}{\sin\theta - \cos\theta} = \frac{2}{2\sin^2\theta - 1}$$
Or
Prove that:
$$\frac{\sin\theta}{1+\cos\theta} + \frac{1+\cos\theta}{\sin\theta} = 2\,\mathrm{cosec}\,\theta$$</td><td>3m</td></tr>
<tr><td>A:-</td><td>L.H.S. = $\frac{\sin\theta - \cos\theta}{\sin\theta + \cos\theta} + \frac{\sin\theta + \cos\theta}{\sin\theta - \cos\theta}$
$= \frac{(\sin\theta - \cos\theta)^2 + (\sin\theta + \cos\theta)^2}{(\sin\theta + \cos\theta)(\sin\theta - \cos\theta)}$
$= \frac{\sin^2\theta + \cos^2\theta - 2\sin\theta\cos\theta + \sin\theta^2 + \cos^2\theta + 2\sin\theta\cos\theta}{\sin^2\theta - \cos^2\theta}$
$= \frac{1+1}{\sin^2\theta - (1 - \sin^2\theta)} = \frac{2}{\sin^2\theta - 1 + \sin^2\theta}$
$= \frac{2}{2\sin^2\theta - 1}$ = R.H.S. **...(Hence proved)**
Or</td><td>2m

1m</td></tr>
</table>

	L.H.S. $= \frac{\sin\theta}{1+\cos\theta} + \frac{1+\cos\theta}{\sin\theta}$ $= \frac{\sin^2\theta + (1+\cos\theta)^2}{(1+\cos\theta)\sin\theta}$ $= \frac{\sin^2\theta + 1 + \cos^2\theta + 2\cos\theta}{(1+\cos\theta)\sin\theta}$ $= \frac{1+1+2\cos\theta}{(1+\cos\theta)\sin\theta}$ ...[$\because \sin^2\theta + \cos^2\theta = 1$ $= \frac{2+2\cos\theta}{(1+\cos\theta)\sin\theta} = \frac{2(1+\cos\theta)}{(1+\cos\theta)\sin\theta}$ $= \frac{2}{\sin\theta} = 2 \operatorname{cosec}\theta$ $=$ **R.H.S.** **...(Hence proved)**	
29	The incircle of an isosceles triangle ABC, in which AB = AC, touches the sides BC, CA and AB at D, E and F respectively. Prove that BD = DC.	3m
A:-	Given: The incircle of ΔABC touches the sides BC, CA and AB at D, E and F respectively.  AB = AC To prove: BD = CD Proof: AF = AE ..(i) BF = BD ...(ii) CD = CE ...(iii) Adding (i), (ii) and (iii), we get AF + BF + CD = AE + BD + CE ⇒ AB + CD = AC + BD But AB = AC ...[Given ∴ CD = BD	2m 1m
30	The sum of the radius of base and height of a solid right circular cylinder is 37 cm. If the total surface area of the solid cylinder is 1628 sq. cm, find the volume of the cylinder.	3m
A:-	Let the radius and height of cylinder be r and h respectively r + h = 37 cm ...(i) [Given Total surface area of cylinder = 1,628 cm^2 $2\pi r(r + h) = 1{,}628$ ⇒ $2\pi r(37) = 1{,}628$ $\Rightarrow \quad 2\pi r = \frac{1{,}628}{37} = 44 \quad \Rightarrow \quad 2 \times \frac{22}{7} \times r = 44$ $\Rightarrow \quad r = \frac{44 \times 7}{2 \times 22} = 7$ cm **From (*i*), 7 + *h* = 37** $\Rightarrow \quad h = 37 - 7 = 30$ cm **Volume of cylinder** $= \pi r^2 h = \frac{22}{7} \times 7 \times 7 \times 30$ $=$ **4,620 cm^3**	2m 1m
31	Three distinct coins are tossed together. Find the probability of getting (i) at least 2 heads (ii) at most 2 heads. Or	3m

	A box consists of 100 shirts of which 88 are good, 8 have minor defects and 4 have major defects. Ramesh, a shopkeeper will buy only those shirts which are good but 'Kewal another shopkeeper will not buy shirts with major defects. A shirt is taken out of the box at random. What is the probability that: (i) Ramesh will buy the selected shirt? (ii) 'Kewal will buy the selected shirt?	
A:-	Total number of possible outcomes = 21 = 23 = 8 (HHH, TIT, HHT, THH, THT, HTH, TTH, HTT) (i) Possible outcomes of at least two heads = 4 (HHT, THH, HHH, HTH) ∴ P(at least two heads) = $\frac{4}{8} = \frac{1}{2}$ (ii) Possible outcomes of at most two heads = 7 (HHT, TTT, THH, THT, HTH, TTH, HTT) ∴ P(at most two heads) = $\frac{7}{8}$	1.5m 1.5m
	Or Good, Minor defects, Major defects, Total 88 + 8 + 4 = 100 No. of good shirts = 88 (i) P(Ramesh buys a shirt) = P(good shirts) = $\frac{88}{100} = \frac{22}{25}$ (ii) No. of shirts without major defect = 96 P(Kewal buys a shirt) = P(shirts without major defect) = $\frac{88+8}{100} = \frac{96}{100} = \frac{24}{25}$	1.5m 1.5m
	SECTION D	
32	A journey of 192 km from a town A to town B takes 2 hours more by a ordinary passenger train than a super fast train. If the speed of the faster train is 16 km/h more, find the speeds of the faster and the passenger train. Or If x = 2/3 and x = -3 are roots of the quadratic equation $ax^2 + 7x + b = 0$, find the values of a and b.	5m

A:-	Let the speed of passenger train be x km/h. Then, speed of faster train = (x + 16) km/h According to question: Time taken to complete the journey by faster train (t_1) = $\frac{192}{x+16}$ hours and time taken by passenger train (t_2) = $\frac{192}{x}$ According to question, $\therefore \quad \frac{192}{x} - \frac{192}{x+16} = 2$ $\Rightarrow \quad \frac{192[x+16-x]}{x^2+16x} = \frac{2}{1}$ $\Rightarrow \quad \frac{192 \times 16}{x^2+16x} = \frac{2}{1}$ $\Rightarrow \quad x^2 + 16x = \frac{192 \times 16}{2}$ $\Rightarrow \quad = 192 \times 8$ $\Rightarrow \quad x^2 + 16x - 1536 = 0$ X = 32 km/hr Or We have, $ax^2 + 7x + b = 0$ Here 'a' = a, 'b' = 7, 'c' = b Now, $\alpha = \frac{2}{3}$ and $\beta = -3$ ... [Given Sum of roots = $\frac{-b}{a}$ $(\alpha + \beta) = \frac{-7}{a}$ $\frac{2}{3} + (-3) = \frac{-7}{a}$ $\frac{2-9}{3} = \frac{-7}{a}$ $\frac{-7}{3} = \frac{-7}{a} = a = 3$ Product of roots = $\frac{c}{a}$ $(\alpha \times \beta) = \frac{b}{a}$ $\frac{2}{3} \times (-3) = \frac{b}{a}$ $-2 = \frac{b}{3}$ ...[From (*i*) $b = -6$ $\therefore \quad a = 3, b = -6$	2m 3m 3m 2m
33	In given figure, EB ⊥ AC, BG ⊥ AE and CF ⊥ AE Prove that: (a) ΔABG ~ ΔDCB (b) BC/BD=BE/BA  Or Prove that if a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, the other two sides are divided in the same ratio.	5m

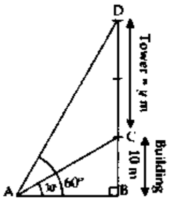
A:-	Given: EB ⊥ AC, BG ⊥ AE and CF ⊥ AE. To prove: (a) ΔABG – ΔDCB, (b) $\frac{BC}{BD} = \frac{BE}{BA}$ Proof: (a) In ΔABG and ΔDCB, ∠2 = ∠5 ... [each 90° ∠6 = ∠4 ... [corresponding angles ∴ ΔABG ~ ΔDCB ... [By AA similarity (Hence Proved) ∴ ∠1 = ∠3 ...(CPCT ... [In ~Δs, corresponding angles are equal (b) In ΔABE and ΔDBC, ∠1 = ∠3 ...(proved above ∠ABE = ∠5 ... [each is 90°, EB ⊥ AC (Given) ΔABE ~ ΔDBC ... [By AA similarity $\frac{BC}{BD} = \frac{BE}{BA}$ ... [In ~Δs, corresponding sides are proportional ∴ $\frac{BC}{BD} = \frac{BE}{BA}$ (Hence Proved) Or  Given: In ΔABC, DE || BC. To prove: $\frac{AD}{DB} = \frac{AE}{EC}$ Const.: Draw EM ⊥ AD and DN ⊥ AE. Join B to E and C to D. Proof: In ΔADE and ΔBDE, $\frac{ar(\Delta ADE)}{ar(\Delta BDE)} = \frac{\frac{1}{2} \times AD \times EM}{\frac{1}{2} \times DB \times EM} = \frac{AD}{DB}$ ....(i) [Area of Δ = $\frac{1}{2}$ x base x corresponding altitude In ΔADE and ΔCDE, $\frac{ar(\Delta ADE)}{ar(\Delta CDE)} = \frac{\frac{1}{2} \times AE \times DN}{\frac{1}{2} \times EC \times DN} = \frac{AE}{EC}$ ∵ DE || BC ...[Given ∴ ar(ΔBDE) = ar(ΔCDE) ...[∵ As on the same base and between the same parallel sides are equal in area From (i), (ii) and (iii), $\frac{AD}{DB} = \frac{AE}{EC}$	2m 3m 3m 2m
34	From a point on the ground, the angles of elevation of the bottom and top of a transmission tower fixed at the top of a 10 m high building are 30° and 60° respectively. Find the height of the tower.	5m

A:-

Let BC be the building and CD be the transmission tower. A be the point on the ground.

Let CD = y m

In rt. ΔABC,



$\tan 30° = \frac{BC}{AB}$

$\Rightarrow \frac{1}{\sqrt{3}} = \frac{10}{AB}$

$AB = 10\sqrt{3}$ m ...(*i*)

In rt. ΔABD, $\tan 60° = \frac{BD}{AB}$

$\Rightarrow \sqrt{3} = \frac{10+y}{10\sqrt{3}}$ ...[From (*i*)

$\Rightarrow 10 + y = 30 \quad \Rightarrow y = 30 - 10 = 20$

$\therefore$ Height of transmission tower = 20 m

3m

2m

35 Given below is the distribution of weekly pocket money received by students of a class. Calculate the pocket money that is received by most of the students. 5m

Pocket Money (in ₹)	*No. of Students*
0–20	2
20–40	2
40–60	3
60–80	12
80–100	18
100–120	5
120–140	2

A:-

Pocket Money (in ₹)	*Number of Students*
0–20	2
20–40	2
40–60	3
60–80	12 f_0
80–100	18 f_1 (Maximum)
100–120	5 f_2
120–140	2

Maximum frequency is 18

$\therefore$ Modal class = 80 – 100

$$\text{Mode} = l + \frac{f_1 - f_0}{2f_1 - f_0 - f_2} \times h$$

$$= 80 + \frac{18-12}{36-12-5} \times 20$$

$$= 80 + \frac{6}{19} \times 20$$

$$= 80 + \frac{120}{19} = 80 + 6.32$$

$$= 86.32 \text{ (approx.)}$$

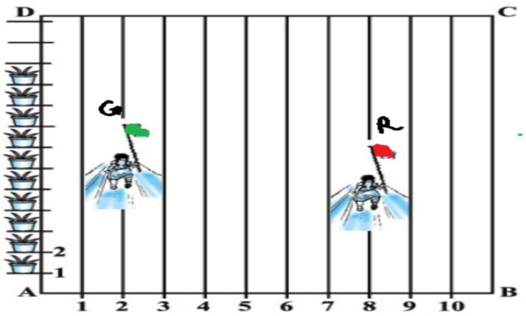
$\therefore$ Required pocket money = ₹86.32 (approx.)

3m

2m

SECTION E

36 As a part of this one-week long festival, students of Durgapura Higher Secondary School thought of planting trees in and around their school to reduce air pollution. It was decided that each section of each class would plant twice as many plants a s class which they belong to. There were 4 sections of each standard from 1 to 12. So, if there are four sections in class 1 say 1A, 1B , 1C and I D, then each section would plant 2 trees. Similarly, each section of class 2 would plant 4 trees and so on. Thus, the number of trees planted by classes 1 to 12 formed an AP given by 8, 16, 24, ,.... Ratan, who is a student of Class 10 B decided to frame a set of questions and answers based on the above information. Help him to do so. 4m

	 (i) Find the total number of trees planted by class 10 students of all the sections together. Or Write down expression to find nth term from end of an A.P. (ii) Also find the total number of trees planted by students of Ratan's class alone. (iii) The members of the Nature Club of the School decided to find the total number of trees planted by the students of the school altogether. Help them to do so.	
A:-	(i) 80 Or ln=l – (n-1)d (ii) 20 (iii) 624	1m 1m 2m
37	In order to conduct Sports Day activities in your School, lines have been drawn with chalk powder at a distance of 1 m each, in a rectangular shaped ground ABCD, 100 flowerpots have been placed at a distance of 1 m from each other along AD, as shown in given figure below. Niharika runs 1/4 th the distance AD on the 2nd line and posts a green flag. Preet runs 1/5 th distance AD on the eighth line and posts a red flag.  (i) Find the position (coordinates) of green flag. (ii) Find the position (coordinates) of red flag. (iii) Find the distance between green and red flag. OR What are the coordinates of midpoint of straight line joining green and red flag?	4m
A:-	(i) (2,25) (ii) (8,20) (iii) √61 units Or (5,22.5)	1m 1m 2m

38	A horse is tied to a peg at one corner of a square shaped grass field of side 15 m by means of a 5 m long rope. (i) What is the shape of area in which horse can graze? (ii) Find the area of that part of the field in which the horse can graze. (iii) Write down the formula for finding length of arc when central angle is given. Or Find the remaining area of field after grazing.				4m
A:-	(i) Quadrant of circle (ii) 19.64 m^2 (iii) Angle x $2\pi r/360$ Or 205.36 m^2				1m 1m 2m

***************BEST OF LUCK*****************