



آغا خان یونیورسٹی ایگزامینیشن بورڈ
AGA KHAN UNIVERSITY EXAMINATION BOARD

Notes from E-Marking Centre SSC-II Mathematics Annual Examinations 2025

Introduction

This document has been prepared for the teachers and candidates of Secondary School Certificate (SSC) Part II (Class X) Mathematics. It contains comments on candidates' responses to the 2025 SSC-II Examinations indicating the quality of the responses and highlighting their relative strengths and weaknesses.

E-Marking Notes

This includes overall comments on candidates' performance on every question and *some* specific examples of candidates' responses which support the mentioned comments. Please note that the descriptive comments represent an overall perception of the better and weaker responses as gathered from the e-marking session. However, the candidates' responses shared in this document represent some specific example(s) of the mentioned comments.

Teachers and candidates should be aware that examiners may ask questions that address the Student Learning Outcomes (SLOs) in a manner that requires candidates to respond by integrating knowledge, understanding and application skills they have developed during the course of study. Candidates are advised to read and comprehend each question carefully before writing the response to fulfil the demand of the question.

Candidates need to be aware that the marks allocated to the questions are related to the answer space provided on the examination paper as a guide to the length of the required response. A longer response will not in itself lead to higher marks. Candidates need to be familiar with the command words in the SLOs which contain terms commonly used in examination questions. However, candidates should also be aware that not all questions will start with or contain one of the command words. Words such as 'how', 'why' or 'what' may also be used. It is imperative to refer to the command word guide available on AKU-EB website for understanding the expectations of the command word.

General Observations

Candidates performed really well in some concepts, such as, Pie Chart, Partial Fractions, Number Line and Quadratic Equations. However, candidates who did not score well mostly struggled to address all parts of the questions and were unable to complete the entire solution as required.

Mentioned below are few concepts that teachers need to focus so that the candidates may perform better.

- Square Root of Algebraic Expressions
- Distance Formula
- Linear Equations
- Pythagoras Theorem
- Central Angle Theorem

- coordinate geometry
- Simultaneous Equations

Note: Candidates' responses shown in this report have not been corrected for grammar, spelling, form at or information.

DETAILED COMMENTS
Constructed Response Questions (CRQs)

Question No. 1

Question Text

The given table shows 18 people's favourite colour.

i. Complete the given table.

Colour	Number of People (<i>f</i>)	Angles
Red	3	
Blue	4	
Green	6	
Yellow	5	
Total	18	

ii. Display the information (completed in part i) as a pie chart.

SLO No.

14.1.4

SLO Text

Draw (and interpret) a pie-chart;

Max Marks

3

Cognitive Level

A*

Checking Hints

1 mark for finding correct angles

1 mark for constructing any two correct segment's angles (2 required)

Overall Performance

Candidates generally performed well in this question, with the majority finding it straightforward and completing it successfully. However, a few candidates struggled with the concept of a pie chart and were unable to calculate the required angles or construct the chart accurately. This indicates the need for further reinforcement of data representation skills, particularly in understanding and applying the steps involved in drawing pie charts.

Description of Better Responses

In *better response*, candidates exhibit correct understanding of the sector angle by dividing individual value with the total and multiplying with the whole sum of sector (that is 360) and clear concept of calculating sector of pie chart e.g., $\frac{3}{18} \times 360 = 60^\circ$, construction of pie charts with correct angle formation showed good concept of drawing of pie chart

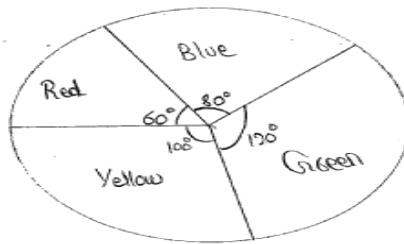
Image of Better Response

Colour	Number of People (f)	Angles
Red	3	$3 \times \frac{360^\circ}{18} = 60^\circ$
Blue	4	$4 \times \frac{360^\circ}{18} = 80^\circ$
Green	6	$6 \times \frac{360^\circ}{18} = 120^\circ$
Yellow	5	$5 \times \frac{360^\circ}{18} = 100^\circ$
Total	18	$60^\circ + 80^\circ + 120^\circ + 100^\circ = 360^\circ$

ii. Display the information (completed in part i) as a pie chart.

(2 Marks)

Space for a pie chart



Description of Weaker Responses

In *weaker responses*, candidates struggled with the concept of sector angles, with some incorrectly multiplying by 180 instead of 360. This revealed a conceptual misunderstanding in calculating sector angles for pie charts. The construction of the pie charts further highlighted these issues, as candidates often drew inaccurate sector angles for instance, a 30° sector appeared larger than a 40° sector resulting in misleading graphical representation. Additionally, some candidates divided the number of people by the total but failed to multiply by 360, indicating a flawed understanding of how to construct pie charts accurately.

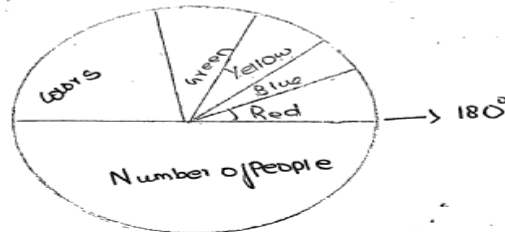
Image of Weaker Response

Colour	Number of People (f)	Angles
Red	3	$\frac{3 \times 180}{18} = 30^\circ$
Blue	4	$\frac{4 \times 180}{18} = 40^\circ$
Green	6	$\frac{6 \times 180}{18} = 60^\circ$
Yellow	5	$\frac{5 \times 180}{18} = 50^\circ$
Total	18	$= 180^\circ$ total

ii. Display the information (completed in part i) as a pie chart.


(2 Marks)

Space for a pie chart



Information in (part i) as a pie chart.

Suggestions for improvement (Highlight all that apply)

Maximising SLO Achievement	Preferred Pedagogy** Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level Identify necessary content required (skills + concepts) Review past paper questions on the concept Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources Think, Pair and Share Knowledge Platform Videos Questioning Technique (Socratic approach) Practical Demonstration <p>** For description of each Pedagogy, refer to Annexure A</p>	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform <p>https://akueb.knowledgeplatform.com/login</p> 

Any Additional Suggestion:

*K = Knowledge U = Understanding A = Application and other higher-order cognitive skills

Question No. 2a

Candidates were given the choice to attempt any ONE out of the two questions: 2a and 2b. Majority of the candidates attempted 2b.

Question Text	Find the square root of the given expression. $4 \frac{x^2}{y^2} + 20 \frac{x}{y} + 13 - 30 \frac{y}{x} + 9 \frac{y^2}{x^2}$
SLO No.	15.3.1
SLO Text	Calculate square root of algebraic expressions by division;
Max Marks	4
Cognitive Level	A
Checking Hints	1 mark of filling correctly for each step of division (4 required)
Overall Performance	A small number of candidates attempted the question, and among those, the proportion of correct responses was very low. Most candidates found the question challenging and were unable to solve the question correctly, indicating a lack of understanding of the underlying concept of square root.
Description of Better Responses	In <i>better responses</i> , candidates followed the correct procedure for finding the square root, demonstrating accuracy at each step with no sign errors e.g., from multiplying $2x/y$ with $2x/y$ to cancelling out $-12 - 30y/x + 9y^2/x^2$. They carried out the step-by-step evaluation systematically and continued the process until reaching a remainder of zero. The final answer was correctly expressed with the plus-minus (\pm) sign, reflecting a sound conceptual understanding of the square root and its complete representation.

Image of Better Response

$$\begin{array}{r}
 2x \\
 y \\
 \hline
 2x \\
 y \\
 \hline
 4x^2 + 5 \\
 + 5 \\
 \hline
 4x^2 + 10 - 3y \\
 - 3y \\
 \hline
 4x^2 + 10 - 6y \\
 x \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 2x^2 + 5 - 3y \\
 \hline
 4x^2 + 20\frac{x}{y} + 13 - 30\frac{y}{x} + 9\frac{y^2}{x^2} \\
 \hline
 +4\frac{x^2}{y^2} + 20\frac{x}{y} + 13 - 30\frac{y}{x} + 9\frac{y^2}{x^2} \\
 \hline
 \oplus \frac{x^2}{y^2} \oplus 20\frac{x}{y} \oplus 25 \\
 \hline
 -12 \quad 30y \quad + 9y^2 \\
 \hline
 \oplus 12 \quad \oplus 30\frac{y}{x} \quad \oplus 9\frac{y^2}{x^2} \\
 \hline
 0 \quad 0 \quad 0
 \end{array}$$

Description of Weaker Responses

In weaker responses, candidates began with incorrect initial steps multiplying $4x^2/y^2$ with x^2 , indicating a lack of understanding of the procedure for finding the square root of an algebraic expression. The subsequent steps, following the first, also reflected incorrect manipulation of algebraic terms. Many candidates demonstrated a flawed understanding of square root properties some attempted to cancel the square root directly with the square of the expression without proper justification.

Image of Weaker Response

$$\begin{array}{r}
 x^2 + 20xy - 64xy \\
 \hline
 4x^2 + 20\frac{x}{y} + 13 - 30\frac{y}{x} + 9\frac{y^2}{x^2} \\
 \hline
 4x^2 \\
 8x^2 \\
 \hline
 20xy \\
 20\frac{x}{y} + 13 - 30\frac{y}{x} + 9\frac{y^2}{x^2} \\
 \hline
 20\frac{x}{y} \\
 \hline
 13 - 30\frac{y}{x} + 9\frac{y^2}{x^2} \\
 \hline
 -17x \\
 81\frac{x}{y} \\
 \hline
 -17\frac{x}{y} + 81\frac{x}{y} \\
 \hline
 64xy \\
 \hline
 \end{array}
 \qquad
 \begin{array}{l}
 x^2 + 20xy \quad | \quad x^2 - 64xy \\
 x = 5 \quad | \quad x = 4 \\
 x = 5 \quad | \quad x = 2 \\
 (5, 2)
 \end{array}$$

Suggestions for improvement (Highlight all that apply)

Maximising Achievement	SLO	Preferred Pedagogy Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level 		<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform https://akueb.knowledgeplatform.com/login

- Identify necessary content required (skills + concepts)
- Review past paper questions on the concept
- Utilise the resource guide for additional materials

- Think, Pair and Share
- Knowledge Platform videos
- Questioning Technique (Socratic approach)
- Practical Demonstration



Any Additional Suggestion:

It is recommended that teachers reinforce the step-by-step procedure for finding the square root of algebraic expressions through guided practice. Emphasis should be placed on understanding the logic behind each step rather than simply memorising procedures. E.g., show a wrong simplification (e.g., $\sqrt{a+b} = \sqrt{a} + \sqrt{b}$) and discuss *why* it doesn't work.. Students should be given opportunities to explore square root properties conceptually, with a focus on when and how expressions can be simplified correctly. Diagnostic assessments and error analysis activities can also be valuable in helping students identify and correct misconceptions related to algebraic manipulation and square root operations.

Question No. 2b

Question Text	Resolve the fraction $\frac{2}{(x^2 - 9)}$ into partial fractions and find the value of A and B .
SLO No.	16.2.1
SLO Text	Convert an algebraic fraction into partial fractions when its denominator consists of a. non-repeated linear factors b. repeated linear factors.
Max Marks	4
Cognitive Level	A
Checking Hints	1 mark for writing $\frac{2}{(x-3)(x+3)} = \frac{A}{(x-3)} + \frac{B}{(x+3)}$ 1 mark for finding $2 = A(x+3) + B(x-3)$ 1 mark for finding the value of $A = \frac{1}{3}$ 1 mark for finding the value of $B = -\frac{1}{3}$
Overall Performance	Most candidates attempted this question, and the majority performed well. Their responses reflected a solid conceptual understanding of partial fractions and the correct evaluation of expressions in terms of values. However, the most common errors observed were basic mathematical mistakes, such as inaccuracies in the addition, subtraction, or division of integers. These minor errors, though not conceptual, affected the final accuracy of the answers.
Description of Better Responses	In <i>better responses</i> , candidates correctly formulated the partial fraction and applied the appropriate identity for $a^2 - b^2$, successfully splitting the expression. They then represented the fraction in terms of constants A and B , took the correct LCM of the linear factors $2 = A(x+3) + B(x-3)$, and proceeded to find the values of A and B through accurate manipulation. Their work was free from sign errors and demonstrated a clear understanding of the partial fraction method and its underlying algebraic principles.

Image of Better Response

$$\frac{2}{x^2-9} \Rightarrow \frac{2}{(x+3)(x-3)} \quad \because a^2-b^2=(a+b)(a-b)$$

$$\frac{2}{(x+3)(x-3)} = \frac{A}{x+3} + \frac{B}{x-3}$$

$$2 = A(x-3) + B(x+3)$$

$$\text{let } x-3=0, x=3$$

$$2 = A(0) + B(6)$$

$$2 = B(6)$$

$$B = \frac{2}{6} = \frac{1}{3}$$

$$\text{let } x+3=0, x=-3$$

$$2 = A(-6) + B(0)$$

$$2 = A(-6)$$

$$A = -\frac{2}{6} = -\frac{1}{3}$$

$$\frac{2}{x^2-9} = -\frac{1}{3(x+3)} + \frac{1}{3(x-3)}$$

$$\frac{2}{x^2-9} = -\frac{1}{3x+9} + \frac{1}{3x-9} \quad \text{and } A = -\frac{1}{3}, B = \frac{1}{3}$$

Description of Weaker Responses

In *weaker responses*, candidates attempted to solve the question using partial fractions but demonstrated several conceptual and procedural errors. Firstly, the expression was incorrectly decomposed, and the identity $(x^2-9)=(x-3)^2$ was misapplied mistaking the difference of squares (x^2-9) for a repeated factor instead of correctly identifying it as $(x-3)(x+3)$. This led to an incorrect setup of the partial fractions.

Image of Weaker Response

$$\frac{2}{(x^2-9)} = \frac{A}{x-9} + \frac{B}{(x^2-9)}$$

$$\frac{2}{(x)^2-(3)^2} = \frac{A}{x-9} + \frac{B}{(x)^2-(3)^2}$$

$$\frac{2}{(x-3)(x+3)} = \frac{A}{x-9} + \frac{B}{(x-3)(x+3)}$$

$$\frac{2(x-9)}{A(x-3)(x+3)} = \frac{B}{(x-3)(x+3)}$$

$$2x-18 = B$$

$$A(x-3)(x+3) (x-3)(x+3)$$

$$(2x-18)(x-3)(x+3) = A \cdot B (x-3)(x+3)$$

$$\text{let } A = x$$

$$2x-18 = xB$$

$$2x-x-18 = B$$

$$\boxed{x-18 = B}$$


for A

$$2x-18 = A(x-18)$$

$$\frac{2x-18}{x-18} = A$$

$$A = 1$$

Suggestions for improvement (Highlight all that apply)

Maximising Achievement	SLO	Preferred Pedagogy Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level Identify necessary content required (skills + concepts) Review past paper questions on the concept Utilise the resource guide for additional materials 		<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources Think, Pair and Share Knowledge Platform videos Questioning Technique (Socratic approach) Practical Demonstration 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform https://akueb.knowledgeplatform.com/login 

Any Additional Suggestion:

Question No. 3a


Candidates were given the choice to attempt any ONE out of the two questions: 3a and 3b. Less number of candidates attempted 3a.

Question Text	The sum of the ages of a father and his son is 45. If the father is 15 years older than the son, determine their ages using linear equations.
SLO No.	17.1.4
SLO Text	Solve word problems based on linear equations (and verify its solutions);
Max Marks	3
Cognitive Level	A
Checking Hints	1 mark for writing $S + F = 45$ 1 mark for writing $F = S + 15$ 1 mark for calculating $F = 30$ and $S = 15$
Overall Performance	Candidates who attempted this question, some were able to comprehend and solve it successfully, demonstrating a clear understanding of the underlying concept. However, most of the candidates struggled significantly, revealing conceptual gaps and a lack of familiarity with the linear equations. Further, this also reflects weak decision making in terms of selection of question to attempt. Please reiterate to the candidates to study both the choice options before deciding which they want to attempt.
Description of Better Responses	<i>Better responses</i> demonstrated a clear and accurate understanding of forming and solving linear equations from a word problem. They correctly assigned a variable to represent the son's age (x) and formulated the father's age as $x+15$, based on the given condition. They successfully translated the verbal information into a mathematical equation: $x+(x+15)=45$ and proceeded to simplify and solve the equation step by step: $2x+15=45$, $2x = 30$, $x=15$.

Image of Better Response	<p>Son's age = x</p> <p>father's age = $x + 15$</p> <p>sum of ages = 45</p> <p>Son's age + father's age = 45</p> <p>$x + x + 15 = 45$</p> <hr/> <p>$2x + 15 = 45$</p> <p>$2x = 45 - 15$</p> <p>$2x = 30$</p> <p>$x = 30/2$</p> <p>$x = 15$</p> <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="padding: 5px;">Thus:</td> <td style="padding: 5px;"> <ul style="list-style-type: none"> • Son's age = $x = 15$ yrs • father's age = $x + 15 = 15 + 15 = 30$ yrs • sum = $30 + 15 = 45$ yrs. </td> </tr> </table>	Thus:	<ul style="list-style-type: none"> • Son's age = $x = 15$ yrs • father's age = $x + 15 = 15 + 15 = 30$ yrs • sum = $30 + 15 = 45$ yrs. 	
Thus:	<ul style="list-style-type: none"> • Son's age = $x = 15$ yrs • father's age = $x + 15 = 15 + 15 = 30$ yrs • sum = $30 + 15 = 45$ yrs. 			
Description of Weaker Responses	<p>In <i>weaker responses</i>, candidates attempted to solve the problem but demonstrated a lack of conceptual understanding in forming a meaningful linear equation from the given word problem. The expressions such as "$15x + 45 = 0$" and "$15x + 30 = 0$" are incorrect and do not reflect the actual relationship described in the problem. Candidates appeared to have used arbitrary coefficients (e.g., $15x$), which are not supported by any contextual information provided in the original scenario.</p>			
Image of Weaker Response	<p>$15x + 45 = 0$</p> <p>$x = 45 - 15$</p> <p>$x = 30 \rightarrow$ Father's age</p> <hr/> <p>$15x + 30 = 0$</p> <p>$x = 30 - 15$</p> <p>$x = 15 \rightarrow$ Son's age</p>			

Suggestions for improvement (Highlight all that apply)

Maximising Achievement	SLO	Pedagogy Used for that SLO	Assessment Strategies
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<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level Identify necessary content required (skills + concepts) Review past paper questions on the concept Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources Think, Pair and Share Knowledge Platform videos Questioning Technique (Socratic approach) Practical Demonstration 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform https://akueb.knowledgeplatform.com/login 
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Any Additional Suggestion:

To improve performance in problems involving age-based equations, it is essential that students are first taught to clearly define variables and understand how to translate real-life relationships into algebraic expressions. Teachers should emphasise the importance of identifying what each variable represents and ensuring that every step in the solution is logically and contextually accurate.

Question No. 3b

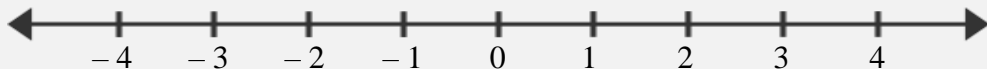
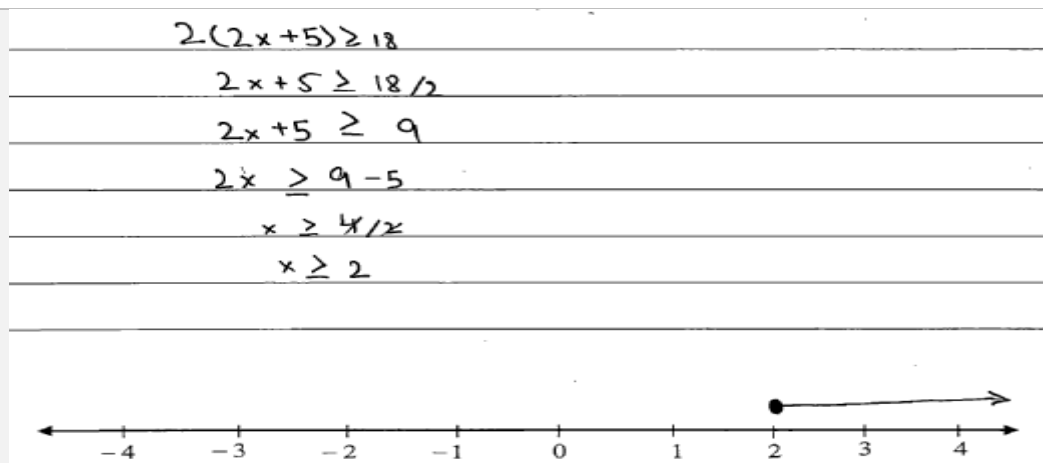
Question Text	Solve the inequality $2(2x+5) \geq 18$ and show the solution on the given number line.
	
SLO No.	17.4.4
SLO Text	Illustrate the solution of the above cases on the number line.
Max Marks	3
Cognitive Level	A
Checking Hints	1 mark for writing $2x+5 \geq 9$ 1 mark for writing $x \geq 2$ 1 mark for correct representation of $x \geq 2$ on the number line.
Overall Performance	Most candidates attempted this question, and less than half of the candidates solved it correctly using a number line, indicating a clear understanding of the concept of inequality. A common mistake observed was in the representation on the number line several candidates failed to highlight or mark the value '2'. This suggests that while the conceptual understanding was strong, attention to detail in the final representation needs improvement.
Description of Better Responses	In <i>better responses</i> , candidates demonstrated a correct and complete application of inequalities. All steps ($2x+5 \geq 9$, $2x \geq 4$ and $x \geq 2$) were followed accurately, with appropriate use of inequality properties throughout the solution. The number line was drawn correctly, and the shaded region clearly reflected the range of values satisfying the inequality. This showed that the candidates had a solid understanding of the concept and was able to represent it both algebraically and graphically.

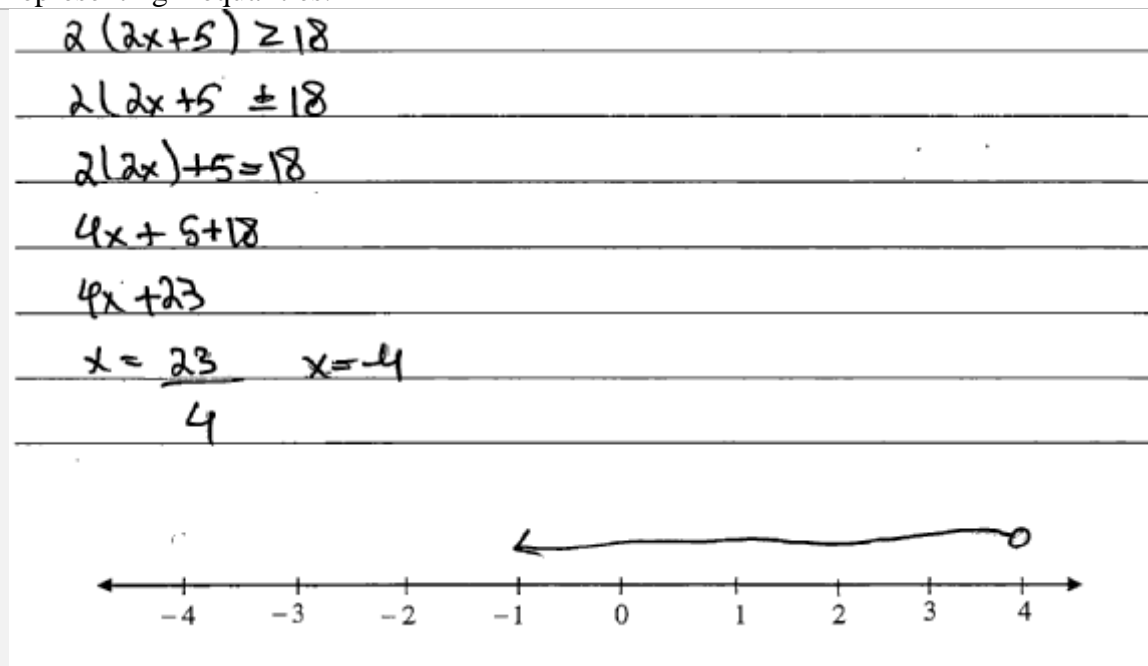
Image of Better Response



Description of Weaker Responses


In *weaker responses*, candidates failed to apply the correct concept of inequality. A common error observed was in the expansion of the bracket. Candidates were expected to multiply the entire expression, such that $2(2x+5)$ becomes $4x+10$. However, many only multiplied the first term, resulting in $4x+5$, which indicates a misunderstanding of the distributive property, in some cases, the candidates mistakenly replaced the inequality sign with an equals sign. Additionally, the number line representation was incorrect, with some candidates either misplacing the boundary values or shading the wrong region. These errors suggest a lack of conceptual understanding as well as procedural fluency in solving and representing inequalities.

Image of Weaker Response



Suggestions for improvement (Highlight all that apply)

Maximising Achievement	SLO	Preferred Pedagogy Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) 		<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform <p>https://akueb.knowledgeplatform.com/login</p>

<ul style="list-style-type: none"> • Ensure the content is taught at the relevant cognitive level • Identify necessary content required (skills + concepts) • Review past paper questions on the concept • Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> • Audio Visual Resources • Think, Pair and Share • Knowledge Platform videos • Questioning Technique (Socratic approach) • Practical Demonstration 	
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Any Additional Suggestion:

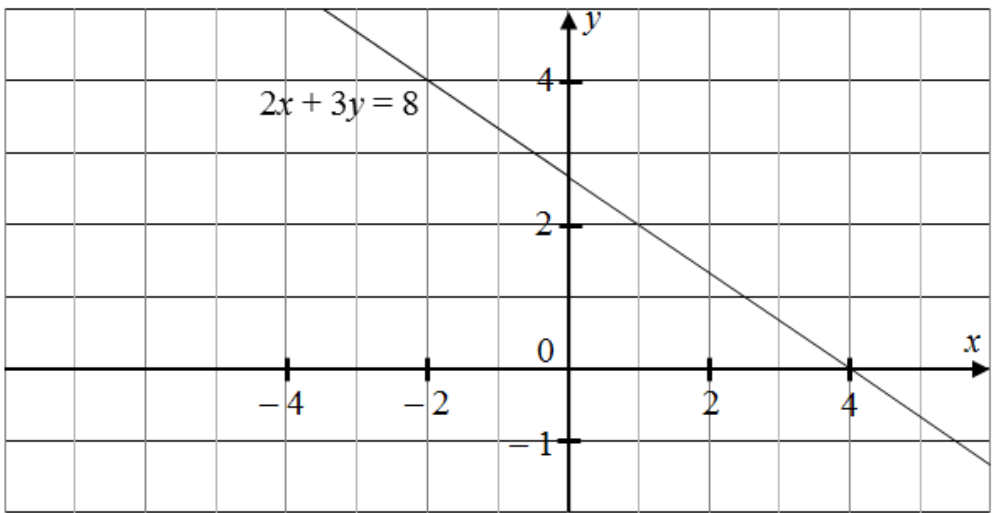
It is recommended that teachers reinforce the distributive property through repeated and varied practice. To reinforce the distributive property through repeated and varied practice, use resources like interactive online games on sites like mathgames.com. Emphasis should be placed on the importance of multiplying each term inside the bracket, not just the first. Incorporating short, focused exercises that isolate bracket expansion before integrating it into inequality problems can build procedural accuracy. Regular feedback on such common mistakes will also help students correct misunderstandings early and apply the concept correctly in more complex algebraic contexts.

Question No. 4

Question Text The simultaneous linear equations are: $x + y = 3$ and $2x + 3y = 8$.

i. Line $2x + 3y = 8$ is shown in the given graph.
On the same graph, draw another line $x + y = 3$ by taking any two points.

ii. From the graph, find and write the solution set.



SLO No.	18.3.1
SLO Text	Solve the simultaneous linear equations in two variables using: b. graphical method.
Max Marks	3
Cognitive Level	A
Checking Hints	a. 1 mark for plotting each point correctly (2 marks) b. 1 mark for the solution set

Overall Performance Overall, the responses were not satisfactory, with few candidates successfully demonstrating a correct understanding of coordinate points, plotting, and identifying the solution set of two lines. However, most candidates struggled with plotting and drawing the lines correctly, which affected their ability to determine the required solution set. These difficulties suggest a need for more practice in graph construction and interpretation.

Description of Better Responses In *better responses*, candidates accurately plotted the two points e.g., (2,1) and (-1,4) and drew the correct lines through them. They also correctly identified and marked the point of intersection $\{(1,2)\}$ as the solution set, demonstrating a clear understanding of the concept. These responses reflected a solid grasp of plotting linear equations and interpreting their graphical solutions.

Image of Better Response

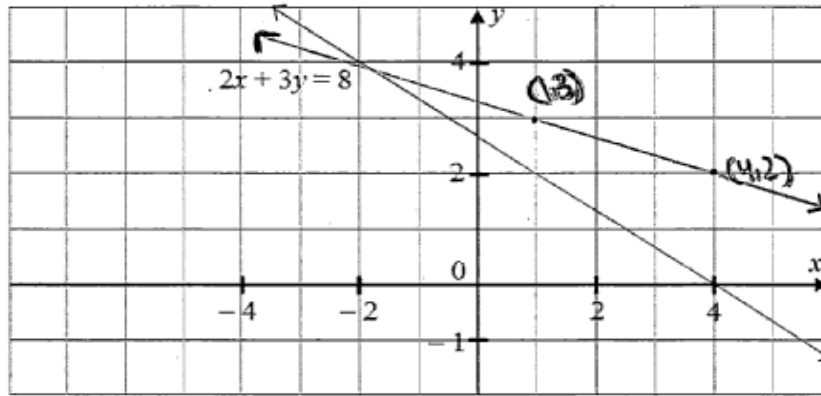
(i)

$x + y = 3$	$y = 3 - x$	$y = 3 - x$									
<table border="1" style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 2px 5px;">x</td> <td style="padding: 2px 5px;">2</td> <td style="padding: 2px 5px;">-1</td> </tr> <tr> <td style="padding: 2px 5px;">y</td> <td style="padding: 2px 5px;">1</td> <td style="padding: 2px 5px;">4</td> </tr> <tr> <td style="padding: 2px 5px;">(x,y)</td> <td style="padding: 2px 5px;">(2,1)</td> <td style="padding: 2px 5px;">(-1,4)</td> </tr> </table>	x	2	-1	y	1	4	(x,y)	(2,1)	(-1,4)	$x + y = 3$ $y = 3 - x$	$y = 3 - (-2)$ $y = 3 - 2$ $y = 1$
x	2	-1									
y	1	4									
(x,y)	(2,1)	(-1,4)									
		$y = 3 - (-1)$ $y = 3 + 1$ $y = 4$									

(ii) solution set = $\{(1,2)\}$
 The solution set is (1,2).


Description of Weaker Responses In *weaker responses*, candidates failed to plot the correct values on the graph, which resulted in the formation of incorrect lines. As a consequence, the solution set identified did not match the required result. Points (4, 2) and (1,3) gave wrong point of intersection. These errors indicate a lack of understanding of coordinate plotting and the relationship between graphical representation and algebraic solutions.

Image of Weaker Response



For x put $y = -1$	$y = 3 - 1$	$x = 1$
$x - 1 = 3$	$y = 2$	For y put $x = 0$
$x = 3 + 1$	$(4, 2)$ 1 st point	$0 + y = 3$
$x = 4$	For x put $y = 2$	$y = 3 - 0$
For y put $x = 1$	$x + 2 = 3$	$y = 3$
$1 + y = 3$	$x = 3 - 2$	$(1, 3)$ 2 nd point

Suggestions for improvement (Highlight all that apply)

Maximising Achievement	SLO	Preferred Pedagogy Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level Identify necessary content required (skills + concepts) Review past paper questions on the concept Utilise the resource guide for additional materials 		<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources Think, Pair and Share Knowledge Platform videos Questioning Technique (Socratic approach) Practical Demonstration 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform <p>https://akueb.knowledgeplatform.com/login</p> 

Any Additional Suggestion:

Question No. 5

Question Text	Find the roots of the equation $2x^2 + 5x + 2 = 0$ by using quadratic formula.
SLO No.	19.3.4
SLO Text	solve the quadratic equations involving real and complex roots by using quadratic formula;
Max Marks	3
Cognitive Level	A
Checking Hints	1 mark for identification of $a = 2, b = 5$ and $c = 2$ 1 mark for writing $x = \frac{-5 \pm \sqrt{9}}{4}$ 1 mark for writing the solution set $\{\frac{-1}{2}, -2\}$
Overall Performance	Overall, candidates found the question straightforward, and the application of the quadratic formula was generally carried out successfully. Only a few candidates struggled with calculations in the subsequent steps, which affected their ability to reach the correct solution set. Additionally, some candidates attempted to use alternative methods to solve the equation, rather than applying the quadratic formula as specifically required by the question. This suggests the need for closer attention to instructions and improved accuracy in computation.
Description of Better Responses	In <i>better responses</i> , candidates correctly identified the values of the coefficients of x^2, x , and the constant term. They accurately applied the quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ and substituted the values appropriately. The steps were carried out systematically, leading to two correct solutions [$x = \frac{-1}{2}$ or $x = -2$] for the equation. These responses demonstrated both procedural fluency and a solid understanding of the quadratic formula and its application.
Image of Better Response	<p>The image shows a student's handwritten solution for the quadratic equation $2x^2 + 5x + 2 = 0$. The student identifies the coefficients $a = 2, b = 5, c = 2$. They use the quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$. The work is organized into two columns. The left column shows the formula with values substituted: $x = \frac{-5 \pm \sqrt{(5)^2 - 4(2)(2)}}{2(2)}$, which simplifies to $x = \frac{-5 \pm \sqrt{25 - 16}}{4}$, then $x = \frac{-5 \pm \sqrt{9}}{4}$, leading to $x = \frac{-5 \pm 3}{4}$. The right column shows the resulting solutions: $x = \frac{-5 - 3}{4}$ and $x = \frac{-5 + 3}{4}$, which are boxed as $x = -2$ and $x = -\frac{1}{2}$. The final solution set is given as $F.S. = \{-\frac{1}{2}, -2\}$.</p>
Description of Weaker Responses	In <i>weaker responses</i> , candidates attempted to use the middle term breaking method [$2x^2 + 5x + 2 = 0$] to solve the equation, despite the question specifically requiring the use

	of the quadratic formula $[x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}]$. This indicated a lack of attention to instructions. Furthermore, candidates who attempted to apply the quadratic formula often struggled with the subsequent steps, such as substituting values correctly or simplifying accurately. These responses reflected both procedural confusion and gaps in understanding the required method.
Image of Weaker Response	

Suggestions for improvement (Highlight all that apply)

Maximising Achievement	SLO	Pedagogy Used for that SLO	Assessment Strategies
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Any Additional Suggestion:

Question No. 6

Question Text	Three points have coordinates $A(-b, -b)$, $B(b, b)$ and $C(-\sqrt{3}b, \sqrt{3}b)$. Show that ABC is an equilateral triangle.
SLO No.	20.2.3
SLO Text	Use distance formula to show that three non-collinear points may form a/an: a. equilateral triangle
Max Marks	3
Cognitive Level	A
Checking Hints	1 mark for finding AB 1 mark for finding BC 1 mark for finding AC

Overall Performance	<p>Only a few candidates were able to successfully prove that the given triangle was equilateral. While most candidates applied the correct distance formula to one side, many struggled to calculate the distances of the remaining sides particularly due to the presence of square roots or variables in the given coordinates. The responses indicated that candidates found it challenging to evaluate the expressions accurately, and the overall task appeared difficult for the majority.</p>
Description of Better Responses	<p>In <i>better responses</i>, candidates demonstrated a correct and complete application of the distance formula $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ for all three sides of the triangle. They exhibited sound conceptual understanding by accurately expanding the formula and simplifying the radicals correctly. As a result, they successfully proved that all three sides were equal $AC = AB = BC = 2\sqrt{2}b$, thereby establishing that the triangle was equilateral, as required.</p>
Image of Better Response	<p>The image shows a student's handwritten work for calculating the side lengths of a triangle. The work is organized into two columns for side lengths AB and BC, and a third column for side length AC. The final conclusion states that the triangle is equilateral because all three sides are equal to $2b\sqrt{2}$.</p> <p> $AB = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ $BC = \sqrt{(-\sqrt{3}b - b)^2 + (\sqrt{3}b - b)^2}$ $AB = \sqrt{(b - (-b))^2 + (b - (-b))^2}$ $BC = \sqrt{(-\sqrt{3}b)^2 + (b)^2 - 2(-\sqrt{3}b)(b) + (\sqrt{3}b)^2 + (b)^2 - 2(\sqrt{3}b)(b)}$ $AB = \sqrt{(b+b)^2 + (b+b)^2}$ $BC = \sqrt{3b^2 + b^2 + 2\sqrt{3}b^2 + 3b^2 + b^2 - 2\sqrt{3}b^2}$ $AB = \sqrt{(2b)^2 + (2b)^2}$ $BC = \sqrt{8b^2} \rightarrow 2b\sqrt{2}$ $AB = \sqrt{4b^2 + 4b^2}$ $AC = \sqrt{(-\sqrt{3}b - (-b))^2 + (\sqrt{3}b - (-b))^2}$ $AB = \sqrt{8b^2} = 2b\sqrt{2}$ $AC = \sqrt{(-\sqrt{3}b + b)^2 + (\sqrt{3}b + b)^2}$ <p>As $AB = BC = AC = \sqrt{8b^2}$ or $2b\sqrt{2}$ so the triangle is an equilateral triangle.</p> $AC = \sqrt{3b^2 + b^2 - 2\sqrt{3}b^2 + 3b^2 + b^2 + 2\sqrt{3}b^2}$ $AC = \sqrt{8b^2} \rightarrow 2b\sqrt{2}$ </p>
Description of Weaker Responses	<p>In <i>weaker responses</i>, candidates struggled to understand the required concept. Several applied the midpoint formula $M.P = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$ instead of the distance formula $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$, which was necessary to prove the triangle was equilateral. As a result, they failed to demonstrate the equality of all three sides. These responses reflected a lack of clarity regarding the objective of the question and an inability to grasp the underlying geometric principle being assessed.</p>


Image of Weaker Response

$$M.P = \left[\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right] = \left[\frac{-3b + -3b}{2}, \frac{-3b + 3b}{2} \right]$$

$$= \left[\frac{-6b}{2}, \frac{0}{2} \right] = [-3b, 0]$$

$$= \left[\frac{-3b + (-\sqrt{9b})}{2}, \frac{-3b + \sqrt{9b}}{2} \right] = \left[\frac{-3b - 3\sqrt{b}}{2}, \frac{-3b + 3\sqrt{b}}{2} \right]$$

Suggestions for improvement (Highlight all that apply)

Maximising SLO Achievement	Preferred Pedagogy Used for this SLO	Assessment Strategies
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Any Additional Suggestion:

It is recommended that teachers reinforce the distinction between various coordinate geometry formulae particularly the distance, midpoint, and slope formulas by providing contextual examples that clarify when and why each is used. Encouraging students to read the question carefully and identify the goal such as proving a triangle is equilateral will help them select and apply the correct method.

Question No. 7a

Candidates were given the choice to attempt any ONE out of the two questions: 7a and 7b. Majority of the candidates attempted 7a.

Question Text Prove that $\frac{(1 + \sin \theta)(1 - \sin \theta)}{\cos^4 \theta} = 1 + \tan^2 \theta$.

SLO No. 21.4.2

SLO Text prove different trigonometric relations using the above trigonometric identities;

Max Marks 4

Cognitive Level	A
Checking Hints	<p>1 mark for writing $\frac{1 - \sin^2 \theta}{\cos^4 \theta}$</p> <p>1 mark for writing $\frac{\cos^2 \theta}{\cos^4 \theta}$</p> <p>1 mark for writing $\sec^2 \theta$</p> <p>1 mark for writing $1 + \tan^2 \theta$</p>
Overall Performance	Overall, the responses indicated that candidates exhibited a good understanding of the question by applying identities and presenting their proofs in an appropriate manner. However, the most common mistake observed was the incorrect application of identities and a lack of consistency in following through the process, which led many candidates astray.
Description of Better Responses	In <i>better responses</i> , candidates successfully applied the correct identity of $a^2 - b^2$ in the form of trigonometric expressions and wrote the expression from $\frac{(1 + \sin \theta)(1 - \sin \theta)}{\cos^4 \theta}$ to $\frac{1 - \sin^2 \theta}{\cos^4 \theta}$. They also used the appropriate trigonometric identities ($1 + \tan^2 \theta = \sec^2 \theta$) and accurately proved the result, demonstrating that LHS equaled RHS.
Image of Better Response	<p>Handwritten work showing the derivation of $1 + \tan^2 \theta = \sec^2 \theta$ from the difference of squares identity. The work is written on lined paper and includes the following steps:</p> $\frac{(1 + \sin \theta)(1 - \sin \theta)}{(\cos^2 \theta)^2} = 1 + \tan^2 \theta$ $\frac{1 - \sin^2 \theta}{(\cos^2 \theta)^2} = 1 + \tan^2 \theta$ $\frac{\cos^2 \theta}{(\cos^2 \theta)^2} = 1 + \tan^2 \theta$ $\frac{1}{\cos^2 \theta} = 1 + \tan^2 \theta$ $\sec^2 \theta = 1 + \tan^2 \theta$ $1 + \tan^2 \theta = 1 + \tan^2 \theta$
Description of Weaker Responses	In <i>weaker responses</i> , candidates attempted the question but failed to apply the correct trigonometric identity. At the place of writing $\frac{1 - \sin^2 \theta}{\cos^4 \theta}$ or $\frac{\cos^2 \theta}{\cos^4 \theta}$, they wrote $\frac{\cos^2 \theta \times \cos^2 \theta}{\cos^4 \theta}$. As a result, they were unable to prove the required identity involving $1 + \tan^2 \theta$.


Image of Weaker Response

$$\frac{(1+\sin\theta)(1-\sin\theta)}{\cos^4\theta} = 1+\tan^2\theta$$

$$= \frac{(\cos^2\theta)(\cos^2\theta)}{\cos^4\theta} = 1+\tan^2\theta$$

$$= \frac{(\cos^4\theta)}{\cos^4\theta} = 1+\tan^2\theta$$

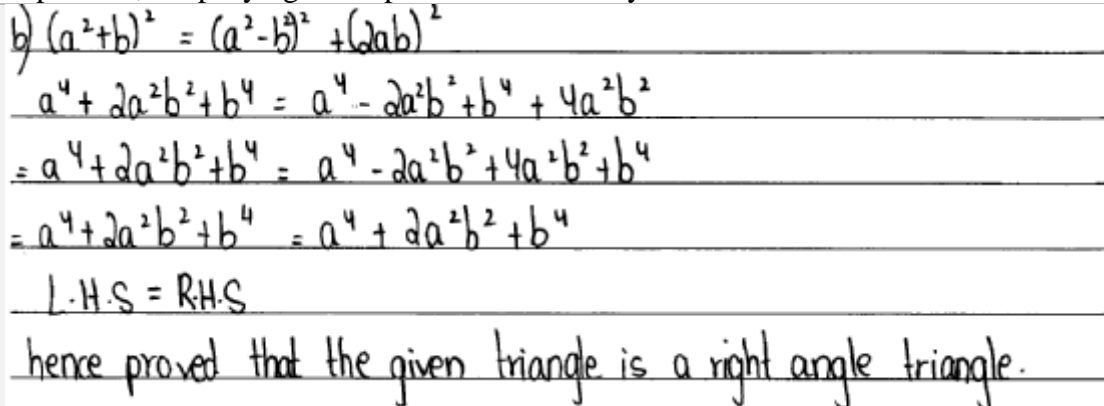
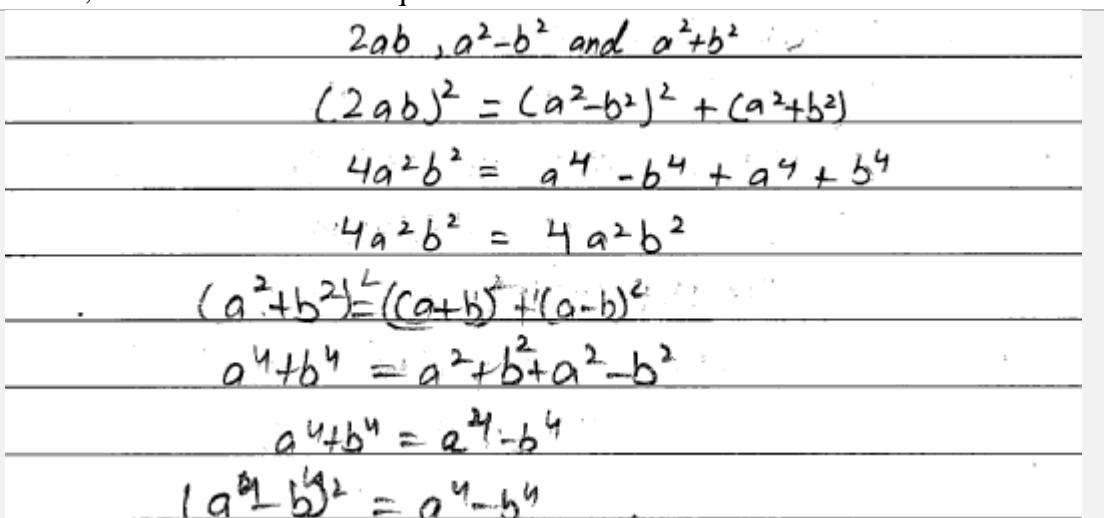
Suggestions for improvement (Highlight all that apply)

Maximising SLO Achievement	Preferred Pedagogy Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level Identify necessary content required (skills + concepts) Review past paper questions on the concept Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources Think, Pair and Share Knowledge Platform videos Questioning Technique (Socratic approach) Practical Demonstration 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform https://akueb.knowledgeplatform.com/login 

Any Additional Suggestion:


Question No. 7b

Question Text	Show, by working, that the given lengths $2ab$, $a^2 - b^2$ and $a^2 + b^2$ are the sides of a right angled triangle. (Note: a and b are positive integers.)
SLO No.	22.1.1 a
SLO Text	Apply the following theorems to solve related problems: a. in a right-angled triangle, the square of the length to hypotenuse is equal to the sum of the squares of the lengths of the other two sides (Pythagoras' theorem)
Max Marks	4
Cognitive Level	A
Checking Hints	1 mark for writing $(a^2 + b^2)^2 = (a^2 - b^2)^2 + (2ab)^2$ 1 mark for expanding $(a^2 - b^2)^2 + (2ab)^2$ correctly

	1 mark for the simplification to get $a^4 + 2a^2b^2 + b^4$ 1 mark for the required proof
Overall Performance	The overall performance on this question was average. Most candidates attempted part (a), as it was a choice-based question. Some applied the correct concept and demonstrated a sound understanding of the Pythagoras Theorem, while a few failed to apply the concept correctly and were therefore unable to prove the required result.
Description of Better Responses	In better responses, candidates demonstrated a clear conceptual understanding by applying the Pythagoras Theorem $H^2 = P^2 + B^2$ to prove the required side. Furthermore, they correctly evaluated relevant identities $(a+b)^2$ and $(a-b)^2$ and applied the properties of exponents, simplifying the expressions accurately to arrive at the correct result.
Image of Better Response	 <p> $b) (a^2+b^2)^2 = (a^2-b^2)^2 + (2ab)^2$ $a^4 + 2a^2b^2 + b^4 = a^4 - 2a^2b^2 + b^4 + 4a^2b^2$ $= a^4 + 2a^2b^2 + b^4 = a^4 - 2a^2b^2 + 4a^2b^2 + b^4$ $= a^4 + 2a^2b^2 + b^4 = a^4 + 2a^2b^2 + b^4$ $L.H.S = R.H.S$ <p>hence proved that the given triangle is a right angle triangle.</p> </p>
Description of Weaker Responses	In <i>weaker responses</i> , candidates used correct application of the Pythagoras theorem but put the hypotenuse, base and perpendicular at wrong sides of equals to $(2ab)^2 = (a^2 + b^2)^2 + (a^2 - b^2)^2$. The steps involved wrong identities $\{ (a+b)^2 = a^2 + 2ab + b^2$ and $(a-b)^2 = a^2 - 2ab + b^2 \}$ and an unnecessary use of the square root, which were not required in this question. As a result, the final answer did not match, and the LHS was not equal to the RHS.
Image of Weaker Response	 <p> $2ab, a^2-b^2 \text{ and } a^2+b^2$ $(2ab)^2 = (a^2-b^2)^2 + (a^2+b^2)^2$ $4a^2b^2 = a^4 - b^4 + a^4 + b^4$ $4a^2b^2 = 4a^2b^2$ $(a^2+b^2)^2 = (a+b)^2 + (a-b)^2$ $a^4 + b^4 = a^2 + b^2 + a^2 - b^2$ $a^4 + b^4 = a^2 - b^4$ $(a^2-b^2)^2 = a^4 - b^4$ </p>

Suggestions for improvement (Highlight all that apply)

Maximising SLO Achievement	Preferred Pedagogy Used for this SLO	Assessment Strategies
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<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level Identify necessary content required (skills + concepts) Review past paper questions on the concept Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources Think, Pair and Share Knowledge Platform videos Questioning Technique (Socratic approach) Practical Demonstration 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform https://akueb.knowledgeplatform.com/login 
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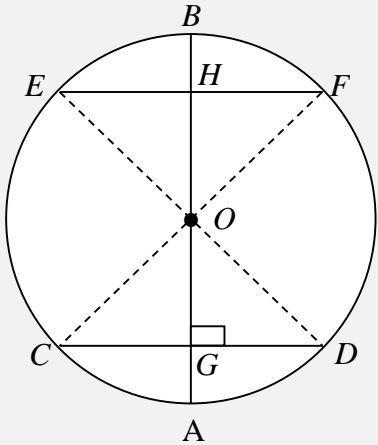
Any Additional Suggestion:

- Clearly mention the incorrect value used in applying the Pythagoras theorem to help identify the specific mistake.
- Point out the incorrect identity used in the simplification steps, such as confusing algebraic identities.
- Add contrast with the better response, where correct identities and logical reasoning were used to arrive at the correct proof.

Question No. 8a

Candidates were given the choice to attempt any ONE out of the two questions: 8a and 8b. majority attempted 8a rather than 8b.

Question Text Consider the given circle with centre O .



NOT TO SCALE

$\overline{AB} = 10\text{cm}$ is the diameter of the circle and $\overline{OH} = \overline{OG}$.

- Is $\overline{CD} \cong \overline{EF}$?
- Find \overline{OE} and justify your answer.
- Write the relation between \overline{CG} and \overline{CD} .

SLO No.	23.1.1
SLO Text	apply the following theorems to solve related problems: b. a straight line drawn from the centre of a circle to bisect a chord which is not a diameter is perpendicular to the chord.
Max Marks	4

Cognitive Level	U
Checking Hints	<p>i. 1 mark for correct decision</p> <p>ii. 1 mark for writing $ED = 10 \text{ cm}$ and 1 mark for finding $\overline{OE} = 5 \text{ cm}$</p> <p>iii. 1 mark for writing $\overline{CD} = 2\overline{CG}$ OR $\overline{CG} = \frac{1}{2}\overline{CD}$</p>
Overall Performance	The overall performance on this question was above average, mainly candidates struggled to provide the correct reason or statement as required by the question. The most common mistake observed was a misconception regarding the difference between a diameter and a chord.
Description of Better Responses	In <i>better responses</i> , candidates correctly applied the concept of congruent chords. In Part (ii), candidates demonstrated an understanding of the relationship between the diameter and radius, and found the correct value ($\overline{OE} = 5 \text{ cm}$) with a valid justification (ED is the diameter). In Part (iii), the relevant theorem was correctly applied using the concept of a chord and its perpendicular, and the candidate provided an accurate mathematical statement for the relationship between CG and CD .
Image of Better Response	<p>i. Is $\overline{CD} \cong \overline{EF}$? (1 Mark)</p> <p><u>Yes.</u></p> <hr/> <p>ii. Find \overline{OE} and justify your answer. (2 Marks)</p> <p>$\overline{OE} = 5 \text{ cm}$</p> <p>bcz \overline{OE} is radius of given circle</p> <p>and diameter (\overline{AB}) = 10cm, $r = \frac{d}{2}$; so, 5cm.</p> <p><u>hence $\overline{OE} = 5 \text{ cm}$</u></p> <hr/> <p>iii. Write the relation between \overline{CG} and \overline{CD}. (1 Mark)</p> <p>$\overline{CD} = 2\overline{CG}$ OR $\overline{CG} = \frac{1}{2}\overline{CD}$</p>
Description of Weaker Responses	In <i>weaker responses</i> , candidates struggled with the basic concept of equal chords and failed to identify the diameter and calculate the incorrect value of the radius. It was also observed that the candidates had difficulty in providing valid reasons and comprehending the required relationships, some of them mentioned the angle (e.g., 140 degrees) as well. As a result, the correct relation between CG and CD was not stated ($CG = CD$).

Image of Weaker Response

i. Is $\overline{CD} \cong \overline{EF}$?

(1 Mark)

Because \overline{CD} and \overline{EF} was equal distance.

ii. Find \overline{OE} and justify your answer.

(2 Marks)

$$\overline{OE} = 140^\circ$$


\overline{OE} is 140° degree.

iii. Write the relation between \overline{CG} and \overline{CD} .

(1 Mark)

\overline{CG} is equal to \overline{CD} and \overline{CD} is equal to \overline{CG} .

Suggestions for improvement (Highlight all that apply)

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Any Additional Suggestion:

To improve, candidates should be guided to revisit the fundamental properties of circles, particularly the relationship between equal chords and their distances from the center. Teachers may emphasise the use of clear, step-by-step reasoning, encouraging students to first identify key elements such as diameter, radius, and central angles before attempting the solution. Practice with structured diagrams and guided examples can help students connect theorems to problem situations and avoid unrelated references (e.g., incorrect angles). Regular short exercises focusing on stating correct mathematical relationships, such as $CG = CD$, will strengthen conceptual understanding and precision in reasoning.

Question No. 8b

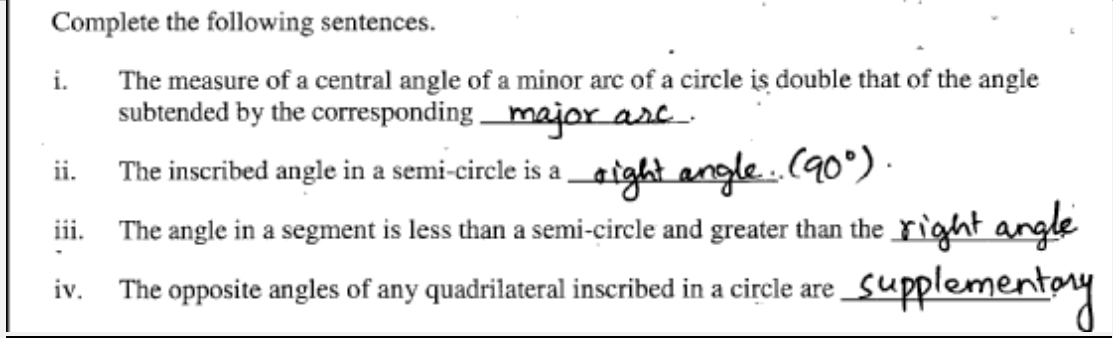

Question Text	Complete the following sentences. i. The measure of a central angle of a minor arc of a circle is double that of the angle subtended by the corresponding _____. ii. The inscribed angle in a semi-circle is a _____. iii. The angle in a segment is less than a semi-circle and greater than the _____. iv. The opposite angles of any quadrilateral inscribed in a circle are _____.
SLO No.	26.1.1
SLO Text	apply the following theorems to solve related problems: a. the measure of a central angle of a minor arc of a circle, is double that of the angle subtended by the corresponding major arc.
Max Marks	4
Cognitive Level	U
Checking Hints	1 mark for each correct completion of the given sentences
Overall Performance	Overall, the candidates' responses demonstrated a sound understanding of the theorem stating that the measure of a central angle of a minor arc of a circle is double that of the angle subtended by the corresponding major arc. Most candidates were able to comprehend the required meaning and expressed the statement using clear and accurate mathematical terminology.
Description of Better Responses	In <i>better responses</i> , candidates demonstrated sound knowledge of the theorem and completed the sentences with valid answers, indicating a clear understanding of the concepts of major arcs, semicircles, angle in a segment and the properties of opposite angles.
Image of Better Response	 <p>Complete the following sentences.</p> <p>i. The measure of a central angle of a minor arc of a circle is double that of the angle subtended by the corresponding <u>major arc</u>.</p> <p>ii. The inscribed angle in a semi-circle is a <u>right angle. (90°)</u>.</p> <p>iii. The angle in a segment is less than a semi-circle and greater than the <u>right angle</u>.</p> <p>iv. The opposite angles of any quadrilateral inscribed in a circle are <u>supplementary</u>.</p>
Description of Weaker Responses	In <i>weaker responses</i> , candidates were unable to identify the appropriate term to justify the given statement. The use of the word "major arc" would have been more accurate than simply referring to it as an "arc". Additionally, the explanation of angle properties was not supported by the relevant theorem, reflecting a lack of conceptual understanding of the statement. The opposite angles of any quadrilateral inscribed in a circle are supplementary. However, some candidates incorrectly wrote "parallel" instead, indicating a lack of understanding. This response suggests confusion between angle relationships and the direction of lines.

Image of Weaker Response

Complete the following sentences.

- i. The measure of a central angle of a minor arc of a circle is double that of the angle subtended by the corresponding arc.
- ii. The inscribed angle in a semi-circle is a circum.
- iii. The angle in a segment is less than a semi-circle and greater than the right-angled triangle.
- iv. The opposite angles of any quadrilateral inscribed in a circle are parallel.

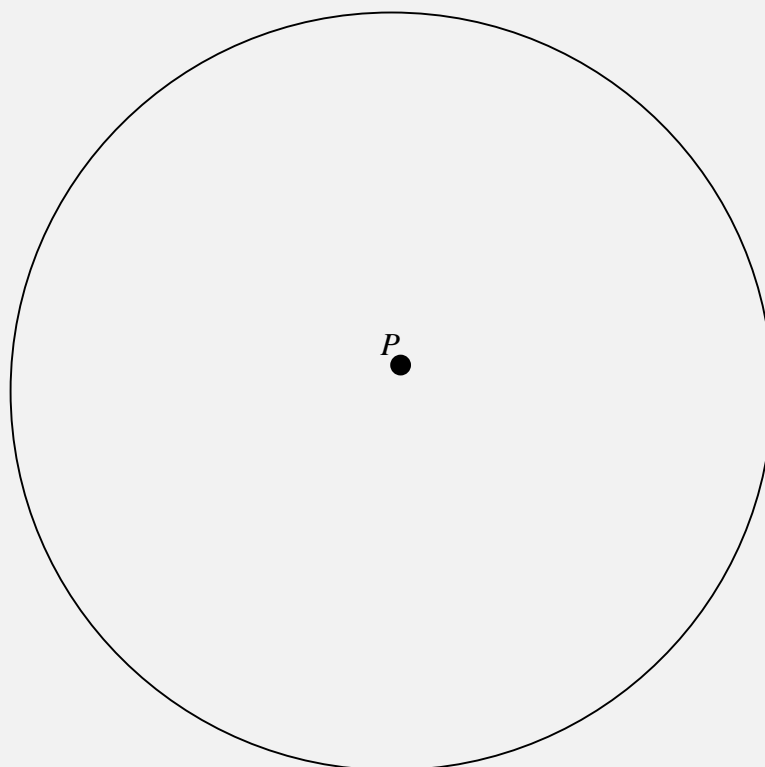
Suggestions for improvement (Highlight all that apply)

Maximising SLO Achievement	Preferred Pedagogy Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> • Identify the expectation of command words (use Command Word Guide) • Ensure the content is taught at the relevant cognitive level • Identify necessary content required (skills + concepts) • Review past paper questions on the concept • Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> • Story Board • Cause and Effect • Fish and Bone • Concept Mapping • Audio Visual Resources • Think, Pair and Share • Knowledge Platform videos • Questioning Technique (Socratic approach) • Practical Demonstration 	<ul style="list-style-type: none"> • Past paper questions • Discussion on E-Marking Notes • AKU-EB Digital Learning Solution powered by Knowledge Platform <p>https://akueb.knowledgeplatform.com/login</p> 

Any Additional Suggestion:

Question No. 9**Question Text**

Draw an inscribed regular hexagon in the given circle.

**SLO No.**

27.2.9

SLO Text

Draw an inscribed regular hexagon in a given circle;

Max Marks

3

Cognitive Level

A

Checking Hints

1 mark for drawing a diameter.

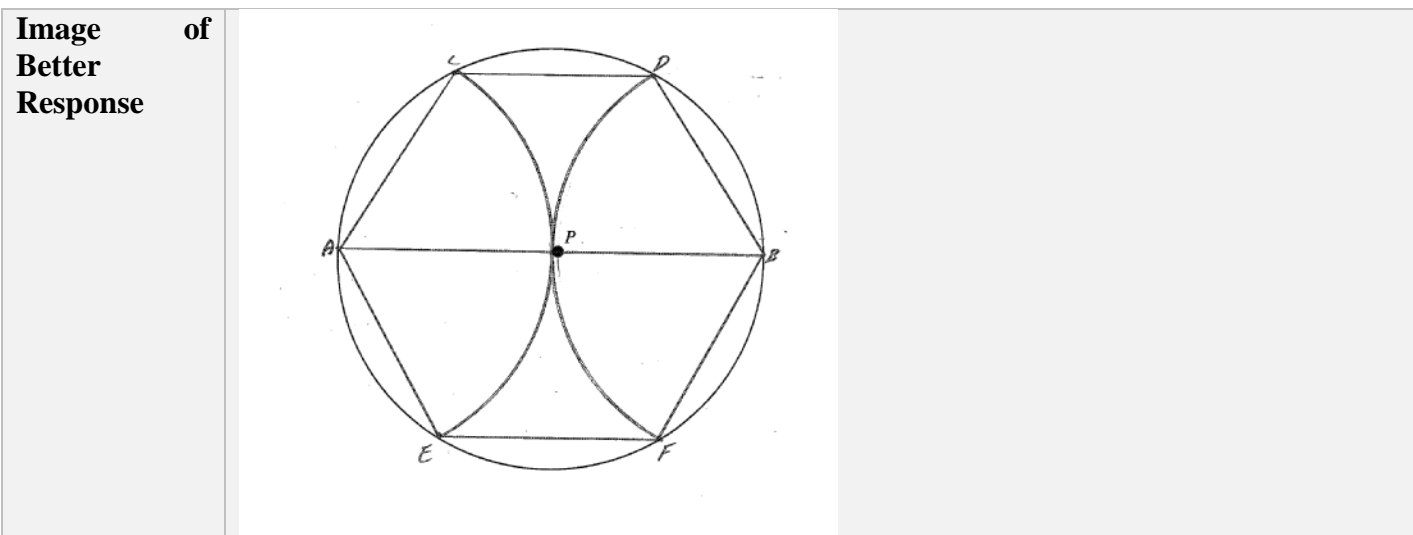
1 mark for drawing an arc (2 required).

Overall Performance

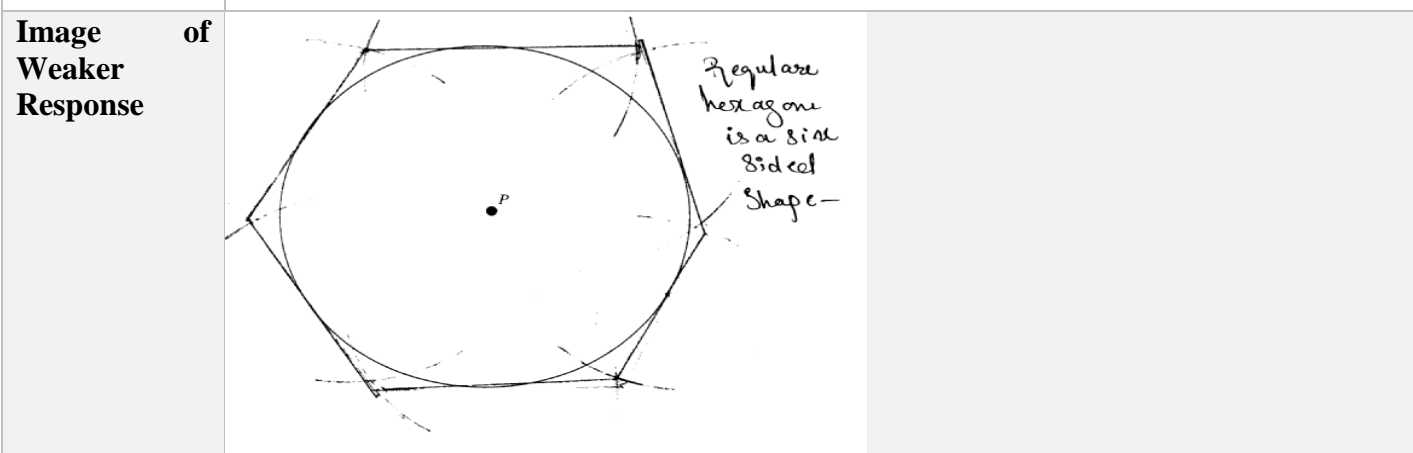
Most candidates were familiar with the required steps and successfully constructed the inscribed hexagon by accurately following the construction method. However, a few struggled with the concept and mistakenly drew the hexagon outside the circle. Please do reiterate in the class the use of a darker pencil while drawing these figures as this helps in the clarity of the image.

Description of Better Responses

In *better responses*, candidates demonstrated a good understanding of constructing a regular inscribed hexagon. They correctly drew the diameter, marked equal arcs, and accurately joined the points to form a proper inscribed hexagon.



Description of Weaker Responses In *weaker responses*, candidates struggled to construct the inscribed hexagon correctly. The arcs marked were not appropriate for this construction, and the diameter was missing in most cases. Overall, candidates failed to produce the required construction accurately.



Suggestions for improvement (Highlight all that apply)

Maximising SLO Achievement	Preferred Pedagogy Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level Identify necessary content required (skills + concepts) Review past paper questions on the concept Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources Think, Pair and Share Knowledge Platform videos Questioning Technique (Socratic approach) 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform <p>https://akueb.knowledgeplatform.com/login</p>

- | | | |
|--|---|--|
| | <ul style="list-style-type: none">• Practical Demonstration | |
|--|---|--|

Any Additional Suggestion:

To strengthen performance, candidates should be encouraged to revise the step-by-step procedure for constructing an inscribed hexagon, beginning with drawing the circle and its diameter as the foundation. Practice activities should emphasise accurate use of the compass for marking arcs and equal divisions of the circle. Teachers may also provide guided exercises with partially drawn diagrams to help students visualise and complete the construction correctly.

Annexure A: Pedagogies Used for Teaching the SLOs

Pedagogy: Storyboard

Description: A visual pedagogy that uses a series of illustrated panels to present a narrative, encouraging creativity and critical thinking. It helps learners organise ideas, sequence events, and comprehend complex concepts through storytelling.

Example: In a Literature class, students are tasked with creating storyboards to visually retell a novel. They draw key scenes, write captions, and present their stories to the class, enhancing their reading comprehension and fostering their imagination.

Pedagogy: Cause and Effect

Description: This pedagogy explores the relationships between actions and consequences. By analysing cause-and-effect relationships, learners develop a deeper understanding of how events are interconnected and how one action can lead to various outcomes.

Example: In a History class, students study the causes and effects of the Industrial Revolution. They research and discuss how technological advancements in manufacturing led to significant societal changes, such as urbanisation and labour reform movements.

Pedagogy: Fish and Bone

Description: A method that breaks down complex topics into main ideas (the fish) and supporting details (the bones). This visual approach enhances comprehension by highlighting essential concepts and their relevant explanations.

Example: During a Biology class on human anatomy, the teacher uses the fish and bone technique to teach about the human skeletal system. Teacher presents the main components of the human skeleton (fish) and elaborates on each bone's structure and function (bones).

Pedagogy: Concept Mapping

Description: An effective way to visually represent relationships between ideas. Learners create diagrams connecting key concepts, aiding in understanding the overall structure of a subject and fostering retention.

Example: In a Psychology assignment, students use concept mapping to explore the various theories of personality. They interlink different theories, such as Freud's psychoanalysis, Jung's analytical psychology, and Bandura's social-cognitive theory, to see how they relate to each other.

Pedagogy: Audio Visual Resources

Description: Incorporating multimedia elements like videos, images, and audio into lessons. This approach caters to different learning styles, making educational content more engaging and memorable.

Example: In a General Science class, the teacher uses a documentary-style video to teach about the solar system. The video includes stunning visual animations of the planets, interviews with astronomers, and background music, enhancing students' interest and understanding of space.

Pedagogy: Think, Pair, and Share

Description: A collaborative learning technique where students ponder a question or problem individually, then discuss their thoughts in pairs or small groups before sharing with the entire class. It fosters active participation, communication skills, and diverse perspectives.

Example: In a Literature in English class, the teacher poses a thought-provoking question about a novel's moral dilemma. Students first reflect individually, then pair up to exchange their opinions, and finally participate in a lively class discussion to explore different viewpoints.

Pedagogy: Questioning Technique (Socratic Approach)

Description: Based on Socratic dialogue, this method stimulates critical thinking by posing thought-provoking questions. It encourages learners to explore ideas, justify their reasoning, and discover knowledge through a process of inquiry.

Example: In an Ethics class, the instructor uses the Socratic approach to lead a discussion on the meaning of justice. By asking a series of probing questions, the students engage in a deeper exploration of ethical principles and societal values.

Pedagogy: Practical Demonstration

Description: A hands-on approach where learners observe real-life applications of theories or skills. Practical demonstrations enhance comprehension, skill acquisition, and problem-solving abilities by bridging theoretical concepts with real-world scenarios.

Example: In a Food and Nutrition class, the instructor demonstrates the proper technique for filleting a fish. Students observe and then practice the skill themselves, learning the practical application of knife skills and culinary precision.

(Note: The examples provided in this annexure serve as illustrations of various pedagogies. It is important to understand that these pedagogies are versatile and can be applied across subjects in numerous ways. Feel free to adapt and explore these techniques creatively to enhance learning outcomes in your specific context.)

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