

Exam Details Report

token_count_1

Exam Overview

Student Name: Vikram
Roll Number: 8HPS37
Exam Type: Annual Examination
Class/Section: 8
Score: 16.5 / 45
Percentage: 36.7%
Performance: Needs Improvement

Strengths

- Excellent accuracy in solving systems of linear equations via elimination.
- Strong foundational knowledge of triangle congruence rules (SSS, SAS, ASA).

Areas for Improvement

- Time management, as several questions were left unattempted.
- Completing all sub-parts of geometry proof questions.
- Application of the Midpoint Theorem and exterior angle properties.

Questions Summary

Q.No.	Marks	Error Type	Mistakes Made	Gap Analysis
1	0 / 5	Not Attempted	None	Student needs to learn how to set up time and work equations for taps and solve resultant quadratic and linear equations.
2	0 / 5	Not Attempted	None	Student should practice translating word problems involving two variables into linear equations.
3	5 / 5	No Error	None	N/A
4	5 / 5	No Error	None	N/A
T1	4 / 5	Incomplete	In the final list for ASA congruence, the student listed the given angle EPA=DPB instead of the required angle PAD=PBE.	Ensure that all three specific components required for a congruence criterion (ASA in this case) are correctly identified and listed.
T2	2.5 / 5	Incomplete	Student only attempted parts (i) and (ii); parts (iii) and (iv) were not addressed.	Practice multi-step geometry proofs involving properties of perpendicular bisectors and angle bisectors.
T3	0 / 5	Not Attempted	None	Review properties of isosceles triangles and external angle theorems in relation to internal angle bisectors.

Q.No.	Marks	Error Type	Mistakes Made	Gap Analysis
T4	0 / 5	Not Attempted	None	Study proofs for straight lines using sum of angles around a point and rhombus properties.
T5	0 / 5	Not Attempted	None	Understand the Midpoint Theorem and its application in proving equality between segments in triangles.
Overall Percentage: 36.7%				
Percentage		36.7%		

Detailed Questions Evaluation

Question 1

[Incorrect]

Score: 0/5

[G] Gap Analysis

Student needs to learn how to set up time and work equations for taps and solve resultant quadratic and linear equations.

Question 2

[Incorrect]

Score: 0/5

[G] Gap Analysis

Student should practice translating word problems involving two variables into linear equations.

Question 3

[Correct]

Score: 5/5

Question 4

[Correct]

Score: 5/5

Question T1

[Partially Correct]

Score: 4/5

[Q] Question

AB is a line segment and P is its mid-point. D and E lie on the same side of AB such that "BA (i) $\angle DAP \cong \angle EBP$ (ii) $AD = BE$.

[C] Concepts Required

- ASA Congruence Rule: Two triangles are congruent if two angles and the included side of one triangle are equal to the corresponding parts of the other.
- CPCT (Corresponding Parts of Congruent Triangles): If two triangles are proved congruent, then all their corresponding sides and angles are equal.

[!] Mistakes Made

In the final list for ASA congruence, the student listed the given angle $\angle EPA = \angle DPB$ instead of the required angle $\angle PAD = \angle PBE$.

Section: Step (i) congruence list

[G] Gap Analysis

Ensure that all three specific components required for a congruence criterion (ASA in this case) are correctly identified and listed.

Question T2

[Partially Correct]

Score: 2.5/5

[Q] Question

$\triangle ABC$ and $\triangle DBC$ are isosceles triangles on the same base BC with A and D on the same side of BC .
(i) $\triangle ABC \cong \triangle DBC$ (ii) $\triangle ABP \cong \triangle DCP$ (iii) AP bisects $\angle A$ and $\angle D$ (iv) AP is the perpendicular bisector of BC .

[C] Concepts Required

- SSS Congruence Rule: Two triangles are congruent if all three sides of one triangle are equal to the corresponding three sides of the other.
- Properties of Isosceles Triangles: In an isosceles triangle, angles opposite to equal sides are equal, and the median/altitude to the base serves as an axis of symmetry.

[!] Mistakes Made

Student only attempted parts (i) and (ii); parts (iii) and (iv) were not addressed.

Section: Final sections

[G] Gap Analysis

Practice multi-step geometry proofs involving properties of perpendicular bisectors and angle bisectors.

Question T3

[Incorrect]

Score: 0/5

[Q] Question

Bisectors of $\angle B$ and $\angle C$ of isosceles triangle ABC ($AB = AC$) meet at O . Show that the external angle bisector of $\angle A$ passes through O .

[C] Concepts Required

- Angle Sum Property and External Angle Theorem: The sum of interior angles of a triangle is 180 degrees, and an exterior angle is equal to the sum of the two opposite interior angles.
- Angle Bisector Properties: An angle bisector divides an angle into two equal parts, influencing the relationships between internal and external angles.

[G] Gap Analysis

Review properties of isosceles triangles and external angle theorems in relation to internal angle bisectors.

Question T4

[Incorrect]

Score: 0/5

[Q] Question

A point O is inside an equilateral quadrilateral $ABCD$ such that $OA = OB$. Show that AO and OC lie on the same straight line.

[C] Concepts Required

- Properties of Rhombus/Quadrilateral: An equilateral quadrilateral is a rhombus; its diagonals bisect each other and are perpendicular.
- Collinearity and Linear Pairs: Proving points lie on a straight line by showing the sum of adjacent angles is 180 degrees or through geometric symmetry.

[G] Gap Analysis

Study proofs for straight lines using sum of angles around a point and rhombus properties.

Question T5

[Incorrect]

Score: 0/5

[Q] Question

In $\triangle PQR$, $PQ = QR$ and L, M, N are mid-points of PQ, QR and RP respectively. Prove that LN

[C] Concepts Required

- Mid-point Theorem: The line segment joining the mid-points of two sides of a triangle is parallel to the third side and half of it.
- Properties of Isosceles Triangles: Triangles with two equal sides have equal corresponding mid-segment lengths derived from those sides.

[G] Gap Analysis

Understand the Midpoint Theorem and its application in proving equality between segments in triangles.

Remedial Action

Topics to Cover:

- **Congruence Rules**: Practice identifying the specific criteria needed for ASA and SSS congruence. Focus on correctly identifying corresponding angles like $\angle PAD$ and $\angle PBE$ rather than just using given information.
- **Properties of Triangles**: Review the properties of Isosceles triangles, specifically that angles opposite to equal sides are equal, and the application of CPCT (Corresponding Parts of Congruent Triangles).
- **Mid-point Theorem**: Revise the theorem stating that the line segment joining the mid-points of two sides of a triangle is parallel to the third side and equal to half of it.
- **Exterior Angle Properties**: Study the relationship where an exterior angle of a triangle equals the sum of its two interior opposite angles: $\angle \text{ext} = \angle \text{int}_1 + \angle \text{int}_2$.
- **Quadrilateral Properties**: Revisit the specific properties of Rhombuses and the conditions for collinearity involving linear pairs on a straight line.

Key Formulas to Master:

- $\text{Area}_{\text{Isosceles}} = \frac{b}{4} \sqrt{4a^2 - b^2}$
- $\text{Midpoint Segment} = \frac{1}{2}(\text{Base})$
- $\angle A + \angle B + \angle C = 180^\circ$

Overall Performance Analysis

The student achieved perfect scores in algebraic word problems (Q3, Q4), showing a clear understanding of variable elimination and substitution. In geometry, while the student correctly identified congruence criteria for T1 and T2, they failed to complete all sub-parts of the latter and did not attempt the more advanced proofs (T3, T4, T5). This suggests a preference for computational tasks over theoretical proofs.