

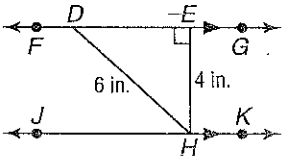
5 Chapter 5 Open-Ended Assessment

Demonstrate your knowledge by giving a clear, concise solution to each problem. Be sure to include all relevant drawings and justify your answers. You may show your solution in more than one way or investigate beyond the requirements of the problem.

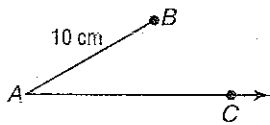
- Two sticks are bent and connected with a rubber band as shown in the diagram. Describe what happens to the rubber band as the ends of the sticks are pulled farther apart. Name the theorem this situation illustrates.



- Mary says \overline{FG} and \overline{JK} are six inches apart and Ashley says they are four inches apart. Who is correct? Explain your answer.



- Suppose \overline{BD} is drawn on this figure so that point D is on \overline{AC} and has a length of 6 centimeters. If the shortest distance from B to \overline{AC} is 5 centimeters, in how many different places on \overline{AC} could point D be located? Explain how you know.



- Draw a triangle that satisfies each situation.
 - Two of the sides are altitudes.
 - The altitudes intersect outside the triangle.
 - The altitudes intersect inside the triangle.
 - The altitudes are also the medians of the triangle.
- $\triangle ABC$ is scalene. Explain the difference between an altitude of $\triangle ABC$ and a perpendicular bisector of a side of $\triangle ABC$.
- What is the difference between the SAS Inequality Theorem and the theorem that says the greatest angle of a triangle is opposite the longest side? Draw a figure to illustrate your explanation.

Chapter 5 Assessment Answer Key

Page 287, Open-Ended Assessment Scoring Rubric

| Score | General Description | Specific Criteria |
|-------|---|--|
| 4 | Superior A correct solution that is supported by well-developed, accurate explanations | <ul style="list-style-type: none"> Shows thorough understanding of the concepts of <i>bisectors, medians, altitudes, inequalities in triangles, indirect proof, the Triangle Inequality, SAS Inequality, and SSS Inequality.</i> Uses appropriate strategies to solve problems. Computations are correct. Written explanations are exemplary. Figures are accurate and appropriate. Goes beyond requirements of some or all problems. |
| 3 | Satisfactory A generally correct solution, but may contain minor flaws in reasoning or computation | <ul style="list-style-type: none"> Shows an understanding of the concepts of <i>bisectors, medians, altitudes, inequalities in triangles, indirect proof, the Triangle Inequality, SAS Inequality, and SSS Inequality.</i> Uses appropriate strategies to solve problems. Computations are mostly correct. Written explanations are effective. Figures are mostly accurate and appropriate. Satisfies all requirements of problems. |
| 2 | Nearly Satisfactory A partially correct interpretation and/or solution to the problem | <ul style="list-style-type: none"> Shows an understanding of most of the concepts of <i>bisectors, medians, altitudes, inequalities in triangles, indirect proof, the Triangle Inequality, SAS Inequality, and SSS Inequality.</i> May not use appropriate strategies to solve problems. Computations are mostly correct. Written explanations are satisfactory. Figures are mostly accurate. Satisfies the requirements of most of the problems. |
| 1 | Nearly Unsatisfactory A correct solution with no supporting evidence or explanation | <ul style="list-style-type: none"> Final computation is correct. No written explanations or work shown to substantiate the final computation. Figures may be accurate but lack detail or explanation. Satisfies minimal requirements of some of the problems. |
| 0 | Unsatisfactory An incorrect solution indicating no mathematical understanding of the concept or task, or no solution is given | <ul style="list-style-type: none"> Shows little or no understanding of most of the concepts of <i>bisectors, medians, altitudes, inequalities in triangles, indirect proof, the Triangle Inequality, SAS Inequality, and SSS Inequality.</i> Does not use appropriate strategies to solve problems. Computations are incorrect. Written explanations are unsatisfactory. Figures are inaccurate or inappropriate. Does not satisfy requirements of problems. No answer given. |