

MAT.07.ER.3.0000G.B.160

Sample Item ID:	MAT.07.ER.3.0000G.B.160
Grade:	07
Primary Claim:	Claim 3: Communicating Reasoning Students can clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of others.
Secondary Claim(s):	Claim 1: Concepts and Procedures Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.
Primary Content Domain:	Geometry
Secondary Content Domain(s):	
Assessment Target(s):	3 B: Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. 3 F: Base arguments on concrete referents such as objects, drawings, diagrams, and actions. 1 F: Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.
Standard(s):	7.G.5, 6.EE.2
Mathematical Practice(s):	2, 3, 4, 6
DOK:	3
Item Type:	ER
Score Points:	3
Difficulty:	M
Key:	See Sample Top-Score Response.
Stimulus/Source:	
Target-Specific Attributes (e.g., accessibility issues):	
Notes:	

Part A

Determine if each of these statements is always true, sometimes true, or never true. Circle your response.

- The sum of the measures of two complementary angles is 90° .

Always True

Sometimes True

Never True

- Vertical angles are also adjacent angles.

Always True

Sometimes True

Never True

3. Two adjacent angles are complementary.

Always True

Sometimes True

Never True

4. If the measure of an angle is represented by x , then the measure of its supplement is represented by $180 - x$.

Always True

Sometimes True

Never True

5. If two lines intersect, each pair of vertical angles are supplementary.

Always True

Sometimes True

Never True

Part B

For each statement you chose as "Sometimes True," provide one example of when the statement is true and one example of when the statement is not true. Your examples should be a diagram with the angle measurements labeled. If you did not choose any statement as "Sometimes True," write "None" in the work space below.

Sample Top-Score Response:

Part A

Statement 1 - Always True

Statement 2 - Never True

Statement 3 - Sometimes True

Statement 4 - Always True

Statement 5 - Sometimes True

Part B

Statement 3 - Example of True (two adjacent angles that have a sum of 90°) Example of Not True (two adjacent angles that have a sum of 80°)

Statement 5 - Example of True (two intersecting lines with all angle measurements of 90°) Example of Not True (two lines that intersect with no right angles)

Scoring Rubric:

Responses to this item will receive 0–3 points, based on the following:

- 3 points:** The student has thorough understanding of facts about supplementary, complementary, vertical, and adjacent angles and can justify these facts using examples. The student evaluates all five statements correctly and provides correctly labeled drawings for Statements 3 and 5 if discrete angles are used for the justification.
- 2 points:** The student has good understanding of facts about supplementary, complementary, vertical, and adjacent angles and can justify these facts using examples. The student evaluates all five statements correctly and provides drawings for Statements 3 and 5 but does not include angle measures if discrete angles are used for the justification. **OR** The student evaluates all five statements correctly and provides a correct drawing for either Statement 3 or Statement 5 but not both. **OR** The student correctly evaluates Statements 3 and 5 and provides correctly labeled drawings for Statement 3 and 5 but incorrectly evaluates one of the other statements.
- 1 point:** The student has limited understanding of facts about supplementary, complementary, vertical, and adjacent angles and how to justify these facts using examples. This is shown by the following:
Answered all 5 statements correctly, but either does not provide drawings for statements 3 and 5. **OR** The student answered some questions incorrectly, but has either question 3 or 5 correct with supporting drawings and/or angle measures.
- 0 points:** The student shows inconsistent or no understanding of facts about supplementary, complementary, vertical, and adjacent angles and how to justify these facts using examples.