

SPARK Hybrid Education Center

Mathematics | Upper Level

Geometry: Logic & Proofs Intro

Name: _____

Date: _____ Score: _____

UNIT TOPICS

- * Conditional statements: if p then q
- * Converse, inverse, contrapositive
- * Two-column proof structure

PRACTICE PROBLEMS - Show all work

1. Write the converse of: 'If it rains, then the ground is wet.'
2. Write the contrapositive of: 'If it is a square, then it has 4 equal sides.'
3. True or False: A conditional and its contrapositive have the same truth value. ____
4. Name the 2 columns in a two-column proof: ____ and ____.
5. What does 'given' mean in a proof? ____
6. State the reflexive property: ____
7. State the transitive property: if $a = b$ and $b = c$, then ____
8. In a proof: angle A is congruent to angle A . What property justifies this? ____
9. Write a simple 3-step proof that vertical angles are equal (sketch + explain).
10. True or False: The inverse of a true conditional is always true. ____

Answers (accept equivalent responses and correct reasoning):

1. [Grade based on correct application of concept taught this week]
2. [Grade based on correct application of concept taught this week]
3. [Grade based on correct application of concept taught this week]
4. [Grade based on correct application of concept taught this week]
5. [Grade based on correct application of concept taught this week]
6. [Grade based on correct application of concept taught this week]
7. [Grade based on correct application of concept taught this week]
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9. [Grade based on correct application of concept taught this week]
10. [Grade based on correct application of concept taught this week]