# NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_DATE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_PER.\_\_\_\_\_\_\_\_

**CHAPTER 2 TEST REVIEW**

**CONDITIONALS, REASONING, & PROOFS**

**5 POINTS ADDED TO YOUR TEST, IF COMPLETE**

**CONDITIONALS & REASONING**

Use the following statement for questions 1-6.

“All triangles have three sides.”

|  |
| --- |
| 1. Rewrite as a conditional statement. |
| 1. Write the hypothesis. |
| 1. Write the conclusion. |
| 1. Write the converse. |
| 1. Write the inverse. |
| 1. Write the contrapositive. |
| 1. Find the next item in the pattern:   Monday, Wednesday, Friday, … |
| 1. What type of reasoning was used to find the pattern in #7? |
| 1. Show that the following conjecture is false by finding a counterexample.   “Supplementary angles are adjacent.” |
| 1. Determine if the conjecture is true. If not, write a counterexample.   “If is an integer, then is positive.” |
| 1. Complete the conjecture: “The product of two even numbers is \_\_\_\_\_\_\_\_\_\_\_\_\_\_.” |
| 1. Write the conditional statement from the following biconditional:   “Two angles are congruent if and only if their measures are equal.” |
| 1. Write the following definition as a biconditional.   “A triangle is a three-sided polygon.” |

**ALGEBRAIC & GEOMETRIC PROOFS**

**Write a two-column proof for each of the following.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Statements | **Reasons** | |  |  | |  |  |  1. If , then . |  |
| |  |  | | --- | --- | | Statements | **Reasons** | |  |  | |  |  |  1. If , then . |  |
| 1. If and , then . | |  |  | | --- | --- | | Statements | **Reasons** | |  |  | |  |  | |  |  | |
| 1. If , then   . | |  |  | | --- | --- | | Statements | **Reasons** | |  |  | |  |  | |
| |  |  | | --- | --- | | Statements | **Reasons** | |  |  | |  |  | |  |  |  1. If and , then . |  |
| |  |  | | --- | --- | | Statements | **Reasons** | |  |  | |  |  |  1. If , then . |  |
| |  |  | | --- | --- | | Statements | **Reasons** | |  |  | |  |  | |  |  | |  |  |  1. GIVEN:   PROVE: |  |
| |  |  | | --- | --- | | Statements | **Reasons** | |  |  | |  |  | |  |  | |  |  |  1. GIVEN:   PROVE: |  |

**GEOMETRIC PROOFS**

**Identify the postulate, definition, or property that proves the following statements.**

|  |  |
| --- | --- |
| **Statement** | **Reason** |
| 1. If is between and , then   . |  |
| 1. If is in the interior of , then . |  |
| 1. If is the midpoint of , then . |  |
| 1. If , then and are complementary. |  |
| 1. If and , then . |  |
| 1. If bisects , then . |  |
| 1. If , then is a right angle. |  |
| 1. If and , then . |  |
| 1. If , then . |  |
| 1. If and , then . |  |

A polygon is a triangle if and

only if it has three sides.

If two angles are congruent, then their measures are equal.

If , then .

Since is not positive,

the conjecture is false.

(Any positive number

would work here.)

it has three sides

(Any example with 2 separate angles whose measures add to .)

a figure is a triangle

If a figure does not have three sides, then it is not a triangle.

If a figure is not a triangle, then it does not have three sides.

If a figure has three sides, then it is a triangle.

If a figure is a triangle, then it has three sides.

A Mishmash of Answers: