Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_

**Geometric Reasoning Tests**

Topic: Inductive & Deductive Reasoning (1st Test) \_\_\_\_\_\_/ 5

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| 1. The Rockets scored over 100 points in each of ten straight games. The newspaper predicts that they will score more than 100 points in tonight’s game.  Is this inductive reasoning or deductive reasoning? Explain your answer using complete sentences. | 2. Complete the conjecture:  The sum of two odd numbers is \_\_\_\_\_\_\_\_\_\_\_ |
| 3. Determine if each conjecture is true. If not write or draw a counterexample.  If a day not a weekday, then it is Saturday. | 4. Complete the table. Then find the algebraic rule.     |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Step (n) | 1 | 2 | 3 | 4 | 5 | | Triangles (f(n)) | 1 | 4 | 9 | 16 |  | |

Topic: Inductive & Deductive Reasoning (2nd Test) \_\_\_\_\_\_/ 5

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| 1. If all three sides of a triangle are congruent, then the triangle is equilateral. All three sides of triangle ABC measure 12 cm.  **Conclusion**: Triangle ABC is an equilateral triangle.  Is this inductive reasoning or deductive reasoning? Explain your answer using complete sentences. | 2. Complete the table. Then find the algebraic rule.     |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Step (n) | 1 | 2 | 3 | 4 | 5 | | Footballs (f(n)) | 1 | 3 | 6 | 10 |  | |
| 3. Determine if each conjecture is true. If not write or draw a counterexample.  If M is between points A and B, then M is the midpoint of . | 4.Complete the conjecture:  The sum of an odd number and an even number  is \_\_\_\_\_\_\_\_\_\_\_\_. |

Topic: Conditional Statements (1st Test) \_\_\_\_\_\_/ 5

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| 1. Identify the hypothesis and conclusion of the conditional statement:  *You may go on the field trip if you have turned in your permission slip.*  Hypothesis:  Conclusion: | 2. Determine whether the following statements are true or false. If false, provide a counter example.  *If your grade is a B, then you are passing this class.*  *If your grade is not a B, then you are not passing this class.* |
| 3. Is the following biconditional statement true or false? If false, provide a counterexample.  *A rectangle is a square if and only if it has four congruent sides.* | 4. Decide if the conclusion is valid or invalid. If it is invalid explain why.  Amy went to Six Flags Amusement Park in Arlington. When Amy goes to an amusement park she rides all of the roller coasters. Six Flags in Arlington has a roller coaster called The Shock Wave.  *Conclusion: Amy road the Shock Wave.* |

Topic: Conditional Statements (2nd Test) \_\_\_\_\_\_/ 5

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| 1. Write a true conditional statement using the following Venn diagram. | 2. Determine whether the following statements are true or false. If false, provide a counter example.  *If two angles are supplementary, then the sum of their measures is 180°.*  *If the sum of the measures of two angles is not 180°, then the two angles are not supplementary.* |
| 3. Is the following biconditional statement true or false? If false, provide a counterexample.  *Two angles are congruent if and only if they have equal measures.* | 4. Decide if the conclusion is valid or invalid. If it is invalid explain why.  Given: If two angles are complementary, then both angles measure less than 90°. Angles that measure less than 90° are acute. measure less than 90°.  *Conclusion:*  are complementary. |

Topic: Proofs (1st Test) \_\_\_\_\_\_/ 5

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| Complete the following geometric proof:    Given:  Prove: x = y   |  |  | | --- | --- | | I know… | because… | |  |  | |

Topic: Proofs (2nd Test) \_\_\_\_\_\_/ 5

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| Complete the following geometric proof:  Given:  Prove: x = 17.   |  |  | | --- | --- | | I know… | because… | |  |  | |