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

Mr. Kaufman Geometry

 **Logic Homework**

 1. What is the negation of the statement “The Sun is shining”?

|  |  |
| --- | --- |
| 1) | It is cloudy. |
| 2) | It is daytime. |
| 3) | It is not raining. |
| 4) | The Sun is not shining. |

 2. What is the negation of the statement “I am not going to eat ice cream”?

|  |  |
| --- | --- |
| 1) | I like ice cream. |
| 2) | I am going to eat ice cream. |
| 3) | If I eat ice cream, then I like ice cream. |
| 4) | If I don’t like ice cream, then I don’t eat ice cream. |

 3. Which statement is the negation of “Two is a prime number” and what is the truth value of the negation?

|  |  |
| --- | --- |
| 1) | Two is not a prime number; false |
| 2) | Two is not a prime number; true |
| 3) | A prime number is two; false |
| 4) | A prime number is two; true |

 4. What is the contrapositive of the statement, “If I am tall, then I will bump my head”?

|  |  |
| --- | --- |
| 1) | If I bump my head, then I am tall.  |
| 2) | If I do not bump my head, then I am tall. |
| 3) | If I am tall, then I will not bump my head. |
| 4) | If I do not bump my head, then I am not tall. |

 5. Which statement is logically equivalent to “If I eat, then I live”?

|  |  |
| --- | --- |
| 1) | If I live, then I eat. |
| 2) | If I eat, then I do not live. |
| 3) | I live if and only if I eat. |
| 4) | If I do not live, then I do not eat. |

 6. What is the converse of the statement “If it is sunny, I will go swimming”?

|  |  |
| --- | --- |
| 1) | If it is not sunny, I will not go swimming. |
| 2) | If I do not go swimming, then it is not sunny. |
| 3) | If I go swimming, it is sunny. |
| 4) | I will go swimming if and only if it is sunny. |

 7. Which statement is the converse of “If it is a 300 ZX, then it is a car”?

|  |  |
| --- | --- |
| 1) | If it is not a 300 ZX, then it is not a car. |
| 2) | If it is not a car, then it is not a 300 ZX. |
| 3) | If it is a car, then it is a 300 ZX. |
| 4) | If it is a car, then it is not a 300 ZX. |

 8. What is the inverse of the statement “If two triangles are not similar, their corresponding angles are not congruent”?

|  |  |
| --- | --- |
| 1) | If two triangles are similar, their corresponding angles are not congruent. |
| 2) | If corresponding angles of two triangles are not congruent, the triangles are not similar. |
| 3) | If two triangles are similar, their corresponding angles are congruent. |
| 4) | If corresponding angles of two triangles are congruent, the triangles are similar. |