NAME:_____

1. Find the contrapositive of the following statement. “If she studies hard in math, she will succeed.”

   [A] If she studies hard in math, she will not succeed.

   [B] If she will not succeed, then she does not study hard in math.

   [C] If she does not study hard in math, she will succeed.

   [D] If she will succeed, then she does not study hard in math.

2. Find the contrapositive of the following statement. If he writes in pen, he can’t erase it.

   [A] If he writes in pen, he can erase it.

   [B] If he does not write in pen, he can’t erase it.

   [C] If he can’t erase it, then he does not write in pen.

   [D] If he can erase it, then he does not write in pen.

3. Write the contrapositive of the following statement. “If a number is not divisible by two, then it is not even.”

4. Write the contrapositive of the following statement. “If a number is not divisible by three, then it is not divisible by six.”

5. Keegan knows that the statement "all rectangles are squares" is false, but he thinks the contrapositive is true. Is he correct? Explain.

6. Write the contrapositive of the major premise of this syllogism to help determine whether the following argument is valid or invalid:

   All flightless birds are without large wings.
   Kathy, the bird, has small wings.

   Therefore, Kathy is not able to fly.

[1] B

[2] D

[3] If a number is even, then it is divisible by two.

[4] If a number is divisible by six, then it is divisible by three.

[5] No, the contrapositive has the same truth value as the original statement. The contrapositive is "if a figure is not a square, then it is not a rectangle," which is also false.

If a bird has large wings, then it is able to fly.

[6] The argument is not valid.