Name:_____

NetID:_____　　　**Lecture:**　　**B**

Discussion:　　**Friday**　**11**　**12**　**1**　**2**　**3**　**4**

1. (5 points) State the contrapositive of the following claim, moving all negations (e.g. "not") so that they are on individual predicates.

　　For every tree t, if t grows in Canada, then t is not tall or t is a conifer.

2. (5 points) State the negation of the following claim, moving all negations (e.g. "not") so that they are on individual predicates.

　　For every computer game g, if g has trendy music or g has an interesting plotline, then g is not cheap.

3. (5 points) Suppose that G and H are functions whose inputs and outputs are real numbers, defined by $G(x) = x - 5$ and $H(x) = \sqrt{x + 1}$. Compute the value of $H(H(G(13)))$, showing your work.

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1. (5 points) Show that the following two expressions are not logically equivalent, by giving specific values of p, q, and r for which they produce different values.

$(p \rightarrow q) \wedge r$

$p \rightarrow (q \wedge r)$

2. (5 points) State the contrapositive of the following claim, moving all negations (e.g. "not") so that they are on individual predicates.

For every dinosaur d, if d is small and d is not a juvenile, then d is not a sauropod.

3. (5 points) Suppose that F and G are functions whose inputs and outputs are positive real numbers, defined by $F(x) = x^2 + 14x$ and $G(x) = \sqrt{x + 49}$. Compute the value of $G(F(p))$. Simplify your answer and show your work.