Quiz 1

Question 1 (2 pts)

Given the proposition A: $(p \to q) \wedge (q \to r)$. Choose the correct answers:

When p=T, q=F, r= F, the value of A is [T/F]

When p=F, q=F, r= T, the value of A is [T/F]

Question 2 (3 pts)

Choose the most accurate statement about the following propositions:
A = $p \to (q \to r)$
B = $(p \to q) \to r$
C = $q \to (p \to r)$.

- [ ] A and C are logical equivalent but A and B are not logical equivalent
- [ ] B and C are not logical equivalent but A and B are logical equivalent
- [ ] All three propositions are logical equivalent
- [ ] A and B are not logical equivalent but B and C are logical equivalent

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Question 3 (2 pts)

Let $P = \exists n \neg Q(n)$, where $Q(n) = n + 9 \geq n^2$.

What is the value of the proposition P on the domain D={1, 2, 3, 4}?

- [ ] F
- [ ] T

Question 4 (3 pts)

Consider the following statements:
A: $\forall x \in \mathbf{Z}\ \exists y \in \mathbf{Z}\ \text{such that}\ x = y + 1$
B: $\exists x \in \mathbf{Z}\ \text{such that}\ \forall y \in \mathbf{Z}\ x = y + 1$
C: $\exists x \in \mathbf{Z}\ \exists y \in \mathbf{Z}\ \text{such that}\ x = y + 1$

Choose the correct answer

- [ ] A and C are both true

- [ ] All A, B and C are true
- [ ] A and B are both true
- [ ] B and C are both true