

Quiz 3 Solution

March 12, 2020

Question 1

- True

Question 2

1. $\forall n \in \mathbb{Z}, \exists m \in \mathbb{Z}, n \mid m$
2. $\forall n \in \mathbb{Z}, -1 \mid n$
3. $\forall n \in \mathbb{Z}, n \mid 0$
4. $\exists m \in \mathbb{Z}, \forall n \in \mathbb{Z}, n \mid m$

Question 3

- $\exists x \in \mathbb{R}, (\exists y \in \mathbb{R}, P(y) \wedge Q(x, y)) \wedge x \leq 5$

Question 4

- True

Question 5

- Answer A - Let $k = 165$
- Answer C - Let $k = 1$

Question 6

- Answer C - Let $x, y \in \mathbb{R}$
- Answer E - Let x and y be arbitrary real numbers.

Question 7

- Answer A - $\forall x \in \mathbb{N}, x > 3 \wedge 2 \mid 2 \Rightarrow Q(x)$

Question 8

- Answer A - Assume that $P(x)$ is true