

Math 2283 - Introduction to Logic

Quiz #7 - 2015.09.18

Name: _____

Express the following quantified statements in an English phrase (e.g 'there is at least one', 'there are exactly two'). Here, $P(x)$ is read as ' x has the property P '.

1. $\mathbf{E}_x P(x)$

2. $\mathbf{E}_x \sim P(x)$

3. $\mathbf{A}_x \sim P(x)$

4. $\mathbf{E}_{x,y} P(x) \wedge P(y) \wedge \sim (x = y)$

5. $\mathbf{A}_{x,y} [P(x) \wedge P(y)] \rightarrow (x = y)$

6. $\mathbf{E}_x \mathbf{A}_y P(x) \wedge (P(y) \rightarrow (y = x))$