Quiz 7

1. $\exists x \in \mathbb{N}\ \exists y \in \mathbb{N}\ y = x^2$

Negate: $\forall x \in \mathbb{N}\ \forall y \in \mathbb{N}\ y \neq x^2$

true! i.e. $x = y = 1$

2. Negation: $\forall x \in \mathbb{N}\ \exists y \in \mathbb{N}\ x \neq y^3$

False for any $x \in \mathbb{N}$, can find $y \in \mathbb{N}$ with $x \neq y^3$

3. Negation: $\exists x \in \mathbb{N}\ \forall y \in \mathbb{N}\ x \neq y^3$

False $x = 2$, then $y^3 \neq 2$ for any $y \in \mathbb{N}$.

4. $\exists x \in \mathbb{N}\ \forall y \in \mathbb{N}\ y \neq x^3$

TRUE Given any $x \in \mathbb{N}$, take $y = x^3$.