Quiz answers

1. $\forall A.A \vee \neg A$ is a tautology
2. $\forall A.A \wedge \neg A$ is not a tautology

Answer 1.1 [Coding Example] __ **/3.3 Points**

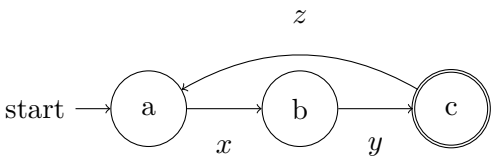
```python
def main():
    print("Hello world")

if __name__ == "__main__":
    main()
```

Answer 1.2
An answer does not need to have points or even a title.

Answer 1.3 [Example with subanswers] __ **/7.5 Points**

a)



b)

Algorithm 1: Double

Data: Natural number n
Result: Double the number n

```
1 m ← n;
2 while m > 0 do
3 |   m ← m − 1;
4 |   n ← n + 1;
5 return n;
```

Special) The label in the subanswer can be overwritten.

c) And counting skips that subanswer

Answer 1.4 [Math example] __/4 Points

$$\begin{aligned}
\textsc{Double}(n) &= \textsc{add}(n, n) \\
&= \textsc{add}(n+1, n-1) \\
&= \dots \\
&= \textsc{add}(n+n, 0) \\
&= n + n \\
&= 2 \cdot n
\end{aligned}$$

Supplement answer [Extra] __/10 Points

$$\dfrac{\dfrac{\dfrac{\dfrac{}{x : \alpha, y : \alpha, z : \beta \vdash y : \alpha}}{x : \alpha, y : \alpha \vdash \lambda z.y : \beta \to \alpha}}{x : \alpha \vdash \lambda y\, z.y : \alpha\beta \to \alpha} \quad \dfrac{}{x : \alpha \vdash x : \alpha}}{\dfrac{x : \alpha \vdash (\lambda y\, z.y)\, x : \beta \to \alpha}{\vdash \lambda x.(\lambda y\, z.y)\, x : \alpha \to \beta \to \alpha}}$$