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]   ___ /3.2 **Points**

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

if __name__ == "__main__":
    main()
```
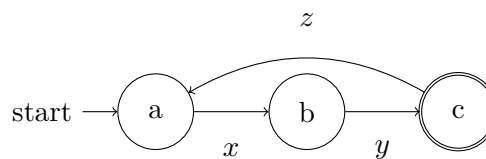
Answer 1.2
An answer does not need to have points or even a title.

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

a)

b)

Algorithm 1: Double
Data: Natural number n
Result: Double the number n

1 $m \leftarrow n$;
2 **while** $m > 0$ **do**
3 $\quad \mid \quad m \leftarrow m - 1$;
4 $\quad \mid \quad n \leftarrow n + 1$;
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

$$
\begin{aligned}
\mathrm{DOUBLE}(n) &= \mathrm{ADD}(n, n) \\
&= \mathrm{ADD}(n + 1, n - 1) \\
&= \ldots \\
&= \mathrm{ADD}(n + n, 0) \\
&= n + n \\
&= 2 \cdot n
\end{aligned}
$$

Supplement answer [Extra]   __/10 Points

$$
\cfrac{
  \cfrac{
    \cfrac{
      \cfrac{\overline{x : \alpha, y : \alpha, z : \beta \vdash y : \alpha}}
            {x : \alpha, y : \alpha \vdash \lambda z.y : \beta \to \alpha}
    }
    {x : \alpha \vdash \lambda y\,z.y : \alpha\beta \to \alpha} \qquad \overline{x : \alpha \vdash x : \alpha}
  }
  {x : \alpha \vdash (\lambda y\,z.y)\,x : \beta \to \alpha}
}
{\vdash \lambda x.(\lambda y\,z.y)\,x : \alpha \to \beta \to \alpha}
$$