(1) For any two atomic sentences P and Q, is the following sentence true? Why?

$(P \Rightarrow Q) \Leftrightarrow (\neg P \vee Q)$

Yes, the above sentence is true. For the sentence $P \Rightarrow Q$, if P is true, then $P \Rightarrow Q$ is true if Q is true, and $P \Rightarrow Q$ is false if Q is false. Since now P is true, $\neg P \vee Q$ is true if Q is true, and $\neg P \vee Q$ is false if Q is false. On the other hand, for the sentence $P \Rightarrow Q$, if P is false, then $P \Rightarrow Q$ is true always. Since now P is false, $\neg P \vee Q$ is also true always.

(2) 用一阶谓词逻辑解答如下问题。已知：张三在哪里，李四也总跟到哪里。现在知道张三在公园，问李四在哪里？

用一阶谓词逻辑表达，上述陈述可以写为：

$\forall x$ (At(张三, x) $\Rightarrow$ At(李四, x)) = True

At(张三, 公园) = True

问：At(李四, ?)

答：

因为$(P \Rightarrow Q) \Leftrightarrow (\neg P \vee Q)$，所以$\forall x$ (At(张三, x) $\Rightarrow$ At(李四, x)) = True 等价于$\forall x$ ($\neg$At(张三, x) $\vee$ At(李四, x)) = True。

令 x = 公园，则 $\neg$At(张三, 公园) $\vee$ At(李四, 公园) = True。

又因为 At(张三, 公园) = True，所以 At(李四, 公园) = True。