

When did they arrive?

A few years ago I was giving a test at 7:00 AM. Most of the students made it on time, but four Alice, Bob, Christy, and Doug, arrived late. They arrived 5, 10, 15, and 20 minutes late (NOT RESPECTIVELY!). No two arrived at the same time. I don't remember the situation clearly but I took the following notes.

1. If Alice arrived 5 minutes late then Bob arrived 15 minutes late.
2. If Bob arrived 15 minutes late then Christy arrived 5 minutes late.
3. If Christy arrived 5 minutes late then Doug arrived 20 minutes late.
4. If Doug arrived 20 minutes late then Bob arrived 5 minutes late.
5. Doug arrived 5 minutes late unless Christy or Alice arrived 5 minutes late.
6. If Doug arrived 5 minutes late then neither Bob nor Christy arrived 20 minutes late.

Help me out. When did each arrive?