1 Example

I want to iterate the fact that un-stability of a pair is with respect to a matching. In other words, a pair \((m, w)\) may be a stable pair with respect to a matching \(M\) but unstable with respect to \(M'\).

In this picture observe that the pair \((m_1, w_2)\) is an unstable pair for the blue matching because \(m_1\) likes \(w_2\) more than his match \((w_3)\), and \(w_2\) likes \(m_1\) more than her match \((m_2)\).

But the same pair, \((m_1, w_2)\), is a stable pair for the green matching. This is because, although \(w_2\) prefers to be with \(m_1\) than her match \((m_2)\) in green matching, \(m_1\) is already happy with his match \(w_1\) in green. To emphasize again, a pair \((m, w)\) is an unstable pair if both individuals prefer to be with each other than their current match. In the last example, only one individual \(w_2\) wants to deviate and be with \(m_1\) and that is not enough for \((m_1, w_2)\) to be an unstable pair for the green matching.