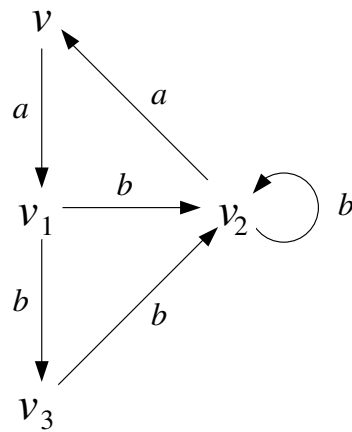
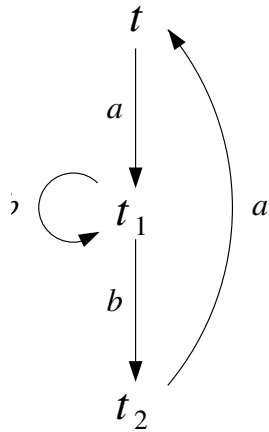


# 2009 Paper 8 Question 14

## Topics in Concurrency

- (a) In the context of transition systems, explain what a *strong bisimulation* is and what it means for two states to be strongly bisimilar. [3 marks]
- (b) Describe Hennessy–Milner logic and its semantics. [4 marks]
- (c) Prove that if two states in transition systems are not strongly bisimilar then there is an assertion of Hennessy–Milner logic that is true of one state but false of the other. [7 marks]
- (d) In the transition systems below, are states  $t$  and  $v$  strongly bisimilar? Justify your answer, by exhibiting either a strong bisimulation or an assertion of Hennessy–Milner logic true of one state but false of the other.



[6 marks]