1. For linear dynamical systems with linear measurement models (both of which have additive Gaussian white noise), it is possible to chose specific control inputs that minimize the state estimation error.
   (a) true
   (b) false

2. The "Seperation Principle" allows us to develop optimal controllers and state estimators for an LQG system separately that when combined, result in an optimal closed-loop policy.
   (a) true
   (b) false

3. A vision-based state estimation system is attached to a robot in a room where only one side of the room is illuminated. If the robot moves itself from the dark part of the room towards the light part of the room (where the cameras can pick up more information), the accuracy of the state estimate will improve. Is this sort of "information seeking" control something that an LQG policy can reason about?
   (a) true
   (b) false

4. The Minimum Mean-Squared Error (MMSE) and Maximum A Posteriori (MAP) estimates are the same for a Gaussian distribution.
   (a) true
   (b) false

5. The Kalman Filter assumes independence between the process noise and the state.
   (a) true
   (b) false

6. The Kalman Filter recursively updates the MMSE/MAP state estimate at each time step. If the state estimation problem for the whole trajectory is posed as a single "batch" optimization problem, is it convex? (Assume linear dynamics, linear measurement model, and additive white Gaussian noise.)
   (a) true
   (b) false

7. The only convex equality constraints are linear equality constraints. This means that all convex equality constraints can be written as $Ay = b$, where y is our primal variable.
   (a) true
   (b) false

8. Convex trajectory optimization allows for the direct inclusion of nonlinear dynamics constraints.
   (a) true
   (b) false