1. A matrix exponential can be used to solve all linear time **invariant** ODE's of the form $\dot{z} = Az$.
   (a) true
   (b) false
2. A matrix exponential can be used to solve all linear time **varying** ODE's of the form $\dot{z} = A(t)z$.
   (a) true
   (b) false
3. You should use a matrix exponential to discretize a nonlinear system after it has been linearized, since differentiating through an explicit integrator is a bad idea.
   (a) true
   (b) false
4. Quaternions and rotation matrices have **all** of the same operations: a multiplication operation, an identity, inverse/conjugation.
   (a) true
   (b) false
5. All quaternion-specific math operations (multiplication, conjugation, etc.) can be computed with standard matrix/vector multiplication after defining the matrix functions $L(q)$ and $R(q)$, as well as the matrices H and T.
   (a) true
   (b) false
6. $L(q_1)q_2 = R(q_2)q_1$
   (a) true
   (b) false
7. $L(q)^T L(q) = I$
   (a) true
   (b) false
8. $L(q_1)^T q_2 = TR(q_2)q_1$
   (a) true
   (b) false
9. $L(q_1)^T q_2 = R(q_2)Tq_1$
   (a) true
   (b) false