Quiz 3 Chapter 3/4
Note the two versions A & B

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Exam A: 1. Local search requires exponential memory
   a) True   b) False

Exam B: 1. Local search is complete
   a) True,   b) False
Exam A: 2. The gradient of a function $f$ will tell me the direction of steepest descent.
   a) True,   b) False

Exam B: 2. Gradient descent with arbitrary stepsize will always converge.
   a) True,   b) False
Exam A: 3. Without crossovers in genetic algorithms children will only have a single parent.
   a) True,   b) False

Exam B: 3. Without mutations in genetic algorithms children will only have a single parent.
   a) True,   b) False
Exam A: 4. Consider an A* search algorithm that tries to find the optimal goalstate with minimal cost. Consider heuristics $h_1, h_2$ with $h_1(n) < h_2(n)$ for all states $n$. A* with $h_1$ is guaranteed to expand fewer nodes or an equal number of nodes to arrive at the optimal goalstate than A* with $h_2$.

  a) True,    b) False

Exam B: 4. Consider a best-first search (BFS) algorithm that tries to find the optimal goalstate with minimal cost. Consider heuristics $h_1, h_2$ with $h_1(n) > h_2(n)$ for all states $n$. BFS with $h_1$ is guaranteed to expand fewer nodes or an equal number of nodes to arrive at the optimal goalstate than BFS with $h_2$.

  a) True,    b) False