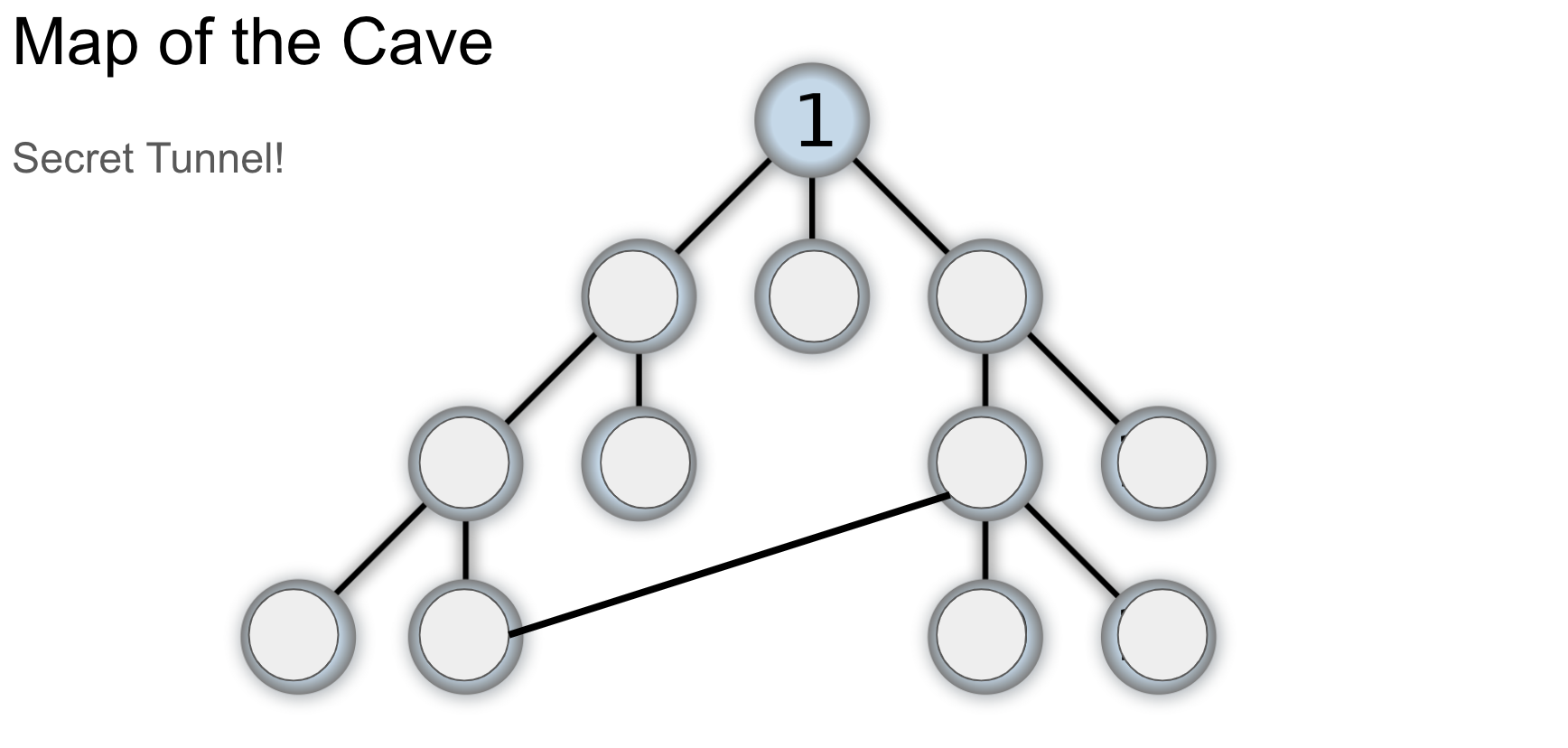
Computer Science - Advanced Topics (Post AP) - **AI Search**

Name:

**Day 1 [BFS vs DFS]**

Data Set: [ 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 ]

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1. In red, trace the path of the BFS if the solution (key) is in the bottom-rightmost node.
2. In blue, trace the path of the BFS if the solution (key) is in the bottom-rightmost node.

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| **Subgoal Label a DFS Method (include any helper methods that you feel are necessary)** |
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| **\*EXT - Subgoal Label a BFS Method (include any helper methods that you feel are necessary)** |
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**Discussion Questions: (Feel free to use this space to jot down some of your ideas prior to discussion)**

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| Describe the difference between BFS and DFS. Which one is better in your opinion, and why? |
| What is not ideal about both BFS and DFS? |

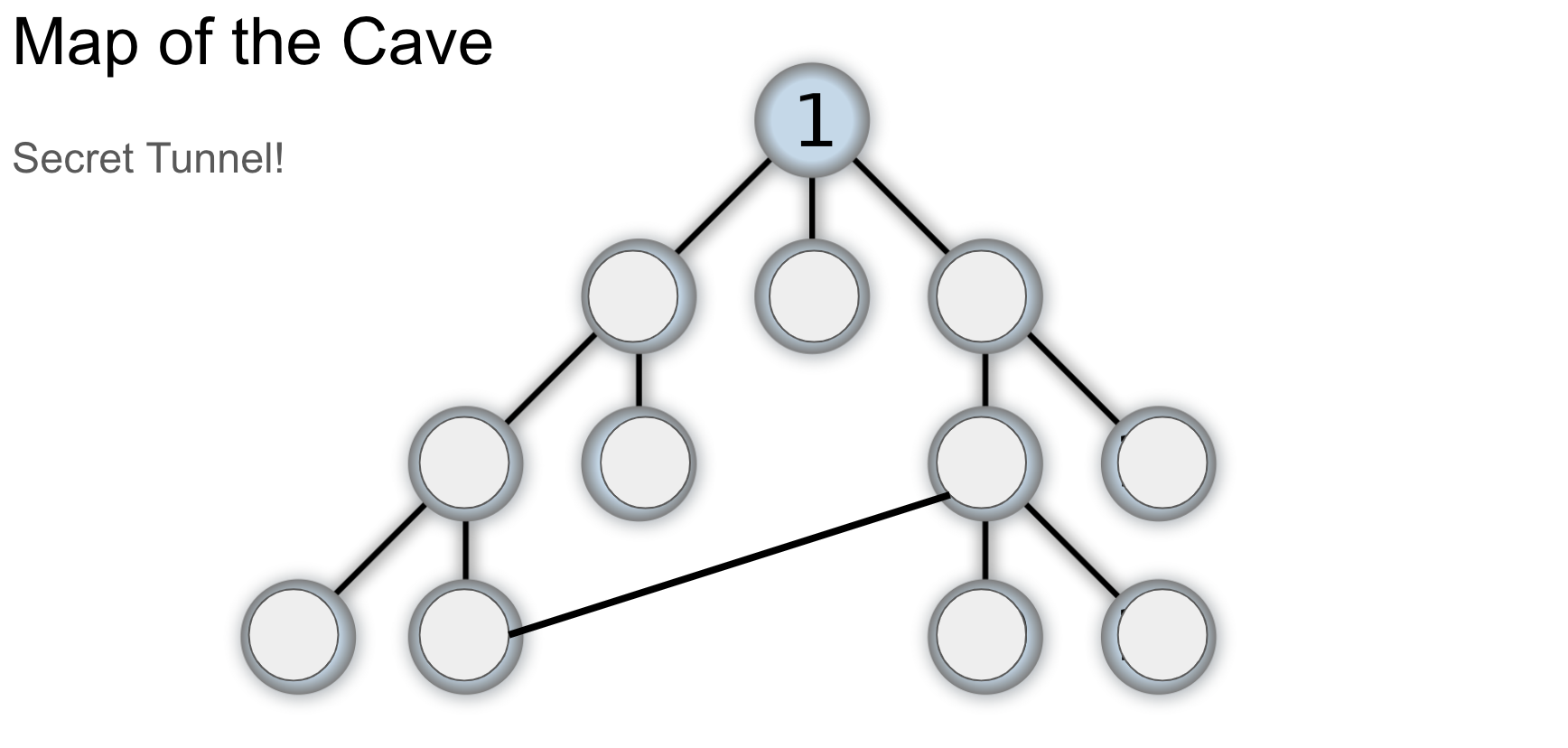
**Day 2 [A\* Search]**

h = the node’s closeness to the goal(treasure)

g = the cost of traveling to that node

f = h + g

Data Set: [ 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 ]

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**10**

**7**

**14**

**7**

**4**

**1**

**6**

**0**

**3**

**6**

**2**

**2**

**5**

**7**

**4**

**4**

**3**

**3**

**12**

**7**

**3**

**1**

**8**

1. In blue, trace the path of the A\* search to the treasure box.
2. In red trace the path of the A\* search if the treasure box is in the bottom-rightmost node.

\*(Question - can we do this with the same h values if the treasure box is moved?)

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| **Subgoal Label an A\* Search Method (include any helper methods that you feel are necessary)**  **\*EXT- start writing out pseudo-code within your subgoal structure** |
|  |

**Discussion Questions: (Feel free to use this space to jot down some of your ideas prior to discussion)**

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| What is the difference between uninformed and informed search methods? |
| Why is A\* generally so much more efficient than BFS or DFS? |
| What are some potential real-world applications of the A\* search? |