

EdX and its Members use cookies and other tracking technologies for performance, analytics, and marketing purposes. By using this website, you accept this use. Learn more about these technologies in the [Privacy Policy](#).

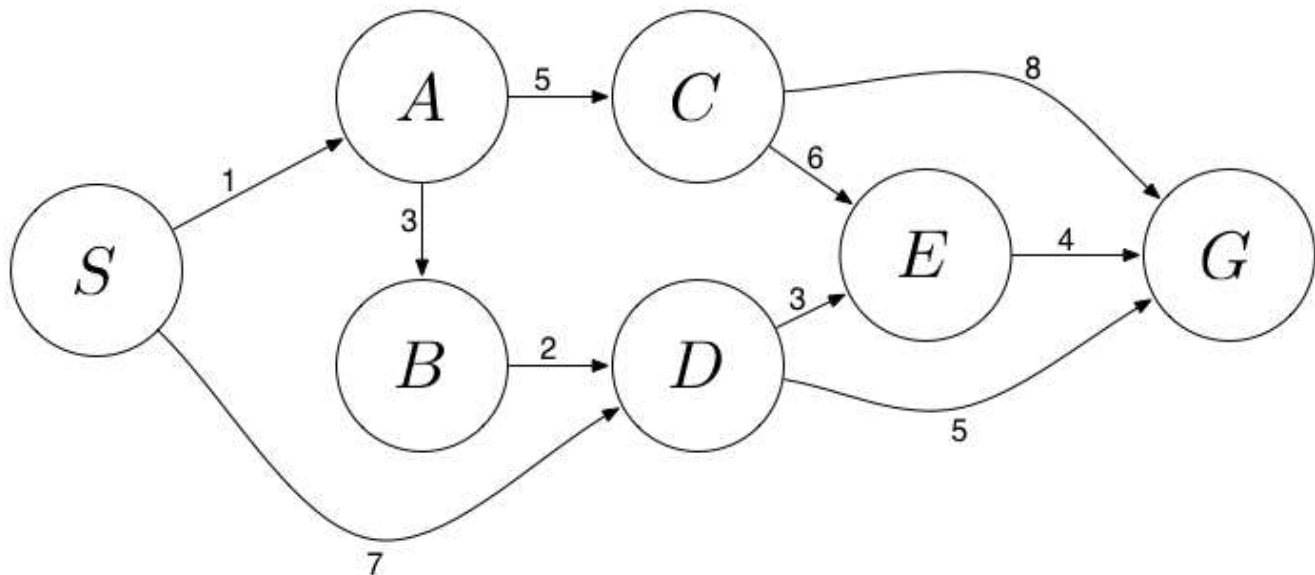


[Course](#) > [Week 10](#) > [Practic...](#) > Q1: Se...

## Q1: Search

### Problem 1: Search

#### Part 1



Answer the following questions about the search problem shown above.

Assume that ties are broken alphabetically (so a partial plan  $S \rightarrow X \rightarrow A$  would be expanded before  $S \rightarrow X \rightarrow B$  and  $S \rightarrow A \rightarrow Z$  would be expanded before  $S \rightarrow B \rightarrow A$ ).

#### Part 1.1

1/1 point (ungraded)

What path would breadth-first graph search return for this search problem?

- ☐  $S \rightarrow A \rightarrow B \rightarrow D \rightarrow G$
- ☐  $S \rightarrow A \rightarrow B \rightarrow D \rightarrow E \rightarrow G$
- ☐  $S \rightarrow A \rightarrow C \rightarrow G$
- ☐  $S \rightarrow A \rightarrow C \rightarrow E \rightarrow G$
- ☒  $S \rightarrow D \rightarrow G$  ✓
- ☐  $S \rightarrow D \rightarrow E \rightarrow G$

Submit

✓ Correct (1/1 point)

## Part 1.2

1/1 point (ungraded)

What path would uniform cost graph search return for this search problem?

- ☒  $S \rightarrow A \rightarrow B \rightarrow D \rightarrow G$  ✓
- ☐  $S \rightarrow A \rightarrow B \rightarrow D \rightarrow E \rightarrow G$
- ☐  $S \rightarrow A \rightarrow C \rightarrow G$
- ☐  $S \rightarrow A \rightarrow C \rightarrow E \rightarrow G$
- ☐  $S \rightarrow D \rightarrow G$

☐  $S \rightarrow D \rightarrow E \rightarrow G$

Submit

✓ Correct (1/1 point)

## Part 1.3

2/2 points (ungraded)

What path would depth-first graph search return for this search problem?

☐  $S \rightarrow A \rightarrow B \rightarrow D \rightarrow G$

☒  $S \rightarrow A \rightarrow B \rightarrow D \rightarrow E \rightarrow G$  ✓

☐  $S \rightarrow A \rightarrow C \rightarrow G$

☐  $S \rightarrow A \rightarrow C \rightarrow E \rightarrow G$

☐  $S \rightarrow D \rightarrow G$

☐  $S \rightarrow D \rightarrow E \rightarrow G$

Submit

✓ Correct (2/2 points)

## Part 1.4

2/2 points (ungraded)

What path would A\* graph search, using a consistent heuristic, return for this search problem?

☒  $S \rightarrow A \rightarrow B \rightarrow D \rightarrow G$  ✓

☐  $S \rightarrow A \rightarrow B \rightarrow D \rightarrow E \rightarrow G$

☐  $S \rightarrow A \rightarrow C \rightarrow G$

☐  $S \rightarrow A \rightarrow C \rightarrow E \rightarrow G$

☐  $S \rightarrow D \rightarrow G$

☐  $S \rightarrow D \rightarrow E \rightarrow G$

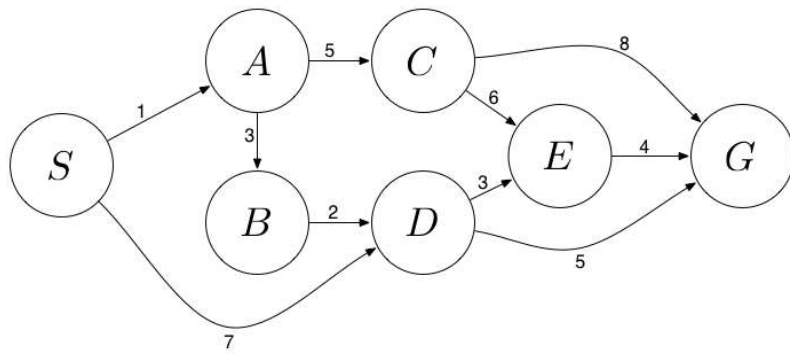
Submit

✓ Correct (2/2 points)

## Part 2

Consider the heuristic for this problem show in the table below. The search graph is repeated for your convenience.

State $s$	$h(s)$
$S$	9
$A$	9
$B$	6
$C$	7
$D$	1
$E$	4
$G$	0



## Part 2.1

1/1 point (ungraded)

Is  $h$  admissible?

☒ Yes ✓

☐ No

Submit

✓ Correct (1/1 point)

## Part 2.2

1/1 point (ungraded)

Is  $h$  consistent?

☐ Yes

☒ No ✓

Submit

✓ Correct (1/1 point)

## Part 2.3

2/2 points (ungraded)

Which of the following paths would greedy graph search return for the above search problem using the heuristic  $h$ ?

☐  $S \rightarrow A \rightarrow B \rightarrow D \rightarrow G$

☐  $S \rightarrow A \rightarrow B \rightarrow D \rightarrow E \rightarrow G$

☐  $S \rightarrow A \rightarrow C \rightarrow G$

☐  $S \rightarrow A \rightarrow C \rightarrow E \rightarrow G$

☒  $S \rightarrow D \rightarrow G$  ✓

☐  $S \rightarrow D \rightarrow E \rightarrow G$

Submit

✓ Correct (2/2 points)

© All Rights Reserved