

## Problem Set 1

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## 1. Solution to problem 1

(a) (i) depth-first

<b>n</b>	<b>q</b>
-	(A)
A	(B, C, D)
B	(E, F, C, D)
E	(K, F, C, D)
K	(F, C, D)

(ii) breadth-first

<b>n</b>	<b>q</b>
-	(A)
A	(B, C, D)
B	(C, D, E, F)
C	(D, E, F, G, H)
D	(E, F, G, H, I, J)
E	(F, G, H, I, J, K)
F	(G, H, I, J, K, L)
G	(H, I, J, K, L)

(iii) uniform-cost

<b>n</b>	<b>q</b>
-	(A)
A	(B, C, D)
B	(C, E, F, D)
C	(E, F, H, D, G)
E	(F, H, D, G, K)
F	(H, L, D, G, K)
H	(L, D, N, G, M, K)
L	(D, N, G, M, K)
D	(N, G, M, I, K, J)
N	(G, M, I, K, J)

(iv) greedy/best-first

<b>n</b>	<b>q</b>
-	(A)
A	(C, D, B)
C	(G, H, D, B)
G	(H, D, B)

(v)  $A^*$

<b>n</b>	<b>q</b>
-	(A)
A	(C, B, D)
C	(B, H, D, G)
B	(H, D, G, E, F)
H	(D, G, N, E, F, M)
D	(G, N, E, F, I, J, M)
G	(N, E, F, I, J, M)

(b)

(c)

## 2. Solution to problem 2