COMP 282 - Quiz 1 (Spring, 2019) Name:

**Question 1** Arrange the following classes of functions (in Big-O notation) in *increasing* order:

1. *O*(*n*)
2. *O*(2*n*)
3. *O*(*n* lg *n*)
4. *O*(*n*2)
5. *O*(1)

**Question 2** Give a formal definition for the following graph:



D

B

G

E

C

F

A

**Question 3** Fill in the rest of the table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data Structure | Insert | Delete | Search | Sort |
| Linked List | (a) | *O*(*n*) | (b) | *O*(*n* lg *n*) |
| Array | (c) | (d) | (e) | *O*(*n* lg *n*) |
| (a) |  | | | |
| (b) |
| (c) |
| (d) |
| (e) |

**Question 4** Draw the graph, given by the following formal definition:

*G* = (*V, A*)

*V* = *{a, b, c, d, e}*

*A* = *{*(*a, c*)*,* (*b, c*)*,* (*c, a*)*,* (*c, d*)*,* (*d, b*)*,* (*d, e*)*,* (*e, a*)*,* (*b, a*)*}*

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