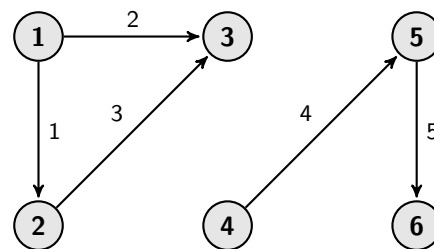


# Quiz #4

Please print your name:

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**Problem 1.** Let  $M$  be the edge-node incidence matrix of the graph to the right. For this problem, do not write down  $M$ .



- (a) Give a basis for  $\text{null}(M)$ .
- (b) Give a basis for  $\text{null}(M^T)$ .

**Problem 2.** Suppose the internet consists of only the three webpages  $A, B, C$  which link to each other as indicated in the diagram. Rank these webpages by computing their PageRank vector.

