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Math 525
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HW 6

1. A

2.

3. A network of basketball teams indicating wins as in arrows and loses as out arrows. Importance would be beating teams that are very good. For example, if you are a small school that wins a lot, but loses everytime to a very good school that plays more competitively, you are not as important. So eigenvector centrality is a better measure.

4.

1. $c(1) = 1/13, c(2) = 3/13, c(3) = 3/13, c(4) = 2/13, c(5) = 2/13, c(6) = 2/13$

2. $c(1) = .455, c(2) = .233, c(3) = .119, c(4) = .537, c(5) = .4343, c(6) = .4971$

3. $\alpha = .1 : c(1) = .149, c(2) = .181, c(3) = .179, c(4) = .163, c(5) = .164, c(6) = .164.$

   $\alpha = .3 : c(1) = .128, c(2) = .210, c(3) = .196, c(4) = .151, c(5) = .158, c(6) = .158.$

   $\alpha = .5 : c(1) = .124, c(2) = .241, c(3) = .207, c(4) = .140, c(5) = .149, c(6) = .149.$

   As α increases, the importance of the most connectted nodes increases more and the less connected nodes goes down more.