**Algorithm three Heuristic Explanation**

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For this algorithm, I chose to use the min-degree heuristic.

In this heuristic, the eliminating order is determined by the number of the neighbors of each hidden variable. The variable with the least number of neighbors is eliminated first and so on.

In case some hidden variables have the same number of neighbors, they will be sorted alphabetically among them. For example, in big\_net network, A1 and B3 both have 2 neighbors, so in case they both are hidden, A1 will be eliminated before B3.

This heuristic reduces the number of mathematical operations that are performed on the variables with higher number of neighbors. Given a set of hidden variables, if the variables with the least number of neighbors are eliminated first, the factors of the other variables will be with a smaller number of rows. If the variables I’ve already eliminated were evidence (parents) or children of those variables- the size of the factors of those variables are already have been reduced. Therefore, the number of multiplication and additions operations is reduced.

For example, in the second query of the input file P(J=T|B=T) for the alarm net, the hidden variables are A, E, and M. After removing M because it is irrelevant the eliminating order is E->A. because according to the structure of the net, E has only one neighbors- A as a child, and A has four- E and B as parents, and J, and M as children.