1. D Separation
   1. I( B, H | C)
      1. Are B and H separated by C?
      2. False
      3. B->E->G<-F->H
      4. B<-A->C->F->H (not blocked)
   2. I( B, H | {C, G})
      1. False
      2. B->E->G<-F->H(not blocked)
      3. B<-A->C->F->H
   3. I( B, H | {C, G, F})
      1. False, because H is a descendent of F
      2. B->E->G<-F->H
      3. B<-A->C->F->H
   4. I( A, D | {E, H})
      1. True, it is blocked
      2. A->C->F<-D
      3. A->B->E->G<-F<-D
   5. I( A, D | {})
      1. True, blocked, because F is not in the evidence, neither are its descendents.
      2. A->C->F<-D
      3. A->B->E->G<-F<-D
2. Probabilities of Bayesian Network
   1. P( A=true, B=false, C=false, D=false, E=false)
      1. =P(A=true)\*P(B=false/A=true)\*P(C=false/A=true)\*P(D=false/C=false)\*P(E=false/B=false,E=false)
      2. .4\*.1\*.75\*.1\*.6 = 0.0018
   2. P( A=true, B=true, D=false)
      1. =P(A=true)\*P(B=true/A=true)\*P(D=false/A=true,C=c)
      2. .4\*.9\*p(.75)
      3. We need to use E to determine D value
      4. .75\*.75\*.4=.225
   3. P( D=true | A=true )
      1. p(d=true) / p(a=true)
      2. p(A=a) \* p(A=a | C=c) \* p(C=c|D=True) / .4
      3. .4 \* .25\*.9 / .4 = .225