**Data for Homework 3**

**Prior probabilities**

**Cat likes cheese**

**(clc)**

**Dilbert at home**

**(dh)**

**Cat ate cheese**

**(cac)**

**Dog barking (db)**

**Neighbor complained (nc)**

**(hdb)**

**Cat hiding**

**(ch)**

**Dilbert ate cheese**

**sandwich (das)**

**Cheese gone**

**(cg)**

**Bread gone**

**(bg)**

p(clc) = 0.9

p(dh) = 0.2

p(db) = 0.5

**Conditional probability tables**

p(cac | clc) cac clc p(das | dh) das dh

0.1 T F 0.0 T F

0.8 T T 0.5 T T

p(bg | das) bg das p(nc | db) nc db

0.5 T F 0.0 T F

0.9 T T 0.7 T T

p(ch | db, cac) ch db cac

0.1 T F F

0.7 T F T

0.6 T T F

0.8 T T T

p(cg | cac, das) cg cac das

0.3 T F F

0.8 T F T

0.95 T T F

0.95 T T T

**Validation Queries:**

**?- prob(cac, [ch, cg], N).**

**N = 0.9402114967462039.**

**?- prob(cac, [nc, ch, cg, bg], N).**

**N = 0.8993353866104716.**

**?- prob(das, [ch, cg, not(bg)], N).**

**N = 0.023567774784290917.**

**?- prob(dh, [cg, bg, not(clc)], N).**

**N = 0.38552188552188543.**

**Test Queries:**

**?- prob(cac, [ch, cg, clc], N).**

**?- prob(cac, [nc, ch, cg, not(clc), bg], N).**

**?- prob(das, [ch, cg, clc, not(dh), not(bg)], N).**

**?- prob(das, [cg, bg, dh, not(clc)], N).**