I four green & four blue parakeets can be placed adjacently on the following way. B G B G B 何图同图同图 No. of ways = 41 × 41 × 2 = 4/x86261 xx = 1 // (a) P(8 functioning coses) = (0.70)8 = 0.058// (b) P (great) = P(1xF, 7xD) + P(2xF, GxD) + P(3xF, 5xD) = (0.7)(03)7+(07)2(03)6+(0.7)3(0.3)5 = 0.00015 + 0.00036 + 0.00083 = 0.00134 P(Advanced) = P(4xF, 4xD)+P(5xF, 3xD)+P(6xF, 2xi))+P(7xF, 1xb) = (0.7) (0.3) + (0.7) 5 (03) 3+ (07) (0.3) 7(0.3) = 0.00194+ 0.00453 +0.01058+0.02471 = 0.04176 P(Extreme) = 18:78 P(8XF) = (0-7)8 = 0.05764.//

(2) The matio of the three models should be 3) 1:91:43

E(x) = \frac{1}{75} \land 1000 \cdot \cdot \cdot \frac{91}{75} \land 1000 \cdot \cdot \cdot \frac{91}{75} \land 1000 \cdot \cdot \cdot \cdot \frac{91}{75} \land 1000 \cdot \cdot

(a) $P(G/V_1) = P(V_1 | G) \times P(G)$ $= \frac{0.7 \times 0.7}{0.7 \times 0.7 \times 0.3 \times 0.2}$ $= \frac{0.83}{1}$

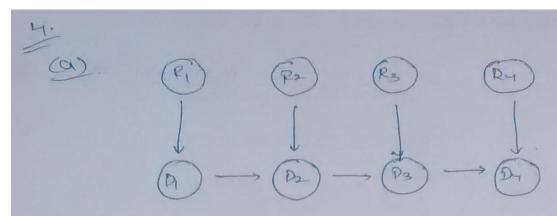
(b) $P(G|V_1,V_2,V_3) = \frac{P(V_1,V_2,V_3)G().P(G)}{P(V_1,V_2,V_3)}$ $= \frac{P(V_1/G).P(V_2,V_3)}{P(V_1,V_2,V_3)}$ $= \frac{(0.7)^4}{(0.7)^4(0.2)^6(0.3)}$ $= \frac{0.93}{4}$

(c)
$$P(V_3 | V_1, V_2) = P(V_1, V_2, V_3)$$

$$= \frac{(0.3)(0.3)(0.7)(0.7) + (0.8)(0.8)(0.2)(0.3)}{(0.3)(0.3)(0.7) + (0.8)(0.8)(0.3)}$$

$$= \frac{0.0441 + 0.0384}{0.063 + 0.192}$$

$$= 0.32 //$$



C.I Assumption:

Next days probability of rathing is received signal. Endependent of todays received signal. If we know what actually happened today.

(B).

P(Dy) = P(Dy | Ry). P(Ry). P(Dy | D3).

P(D3 | R3). P(R3). P(D3 | R2)

P(D2 | R2). P(R2). P(D2 | D1). P(D1)

Elementing P_1 : $T(D_2) = ZP(D_1) \cdot P(P_2(D_1))$ = (0)(0.65) + (1)(0.25) = 0.25

Elemenating R_2 : $t'(D_2) = \sum_{P(R_2)} P(P_2 | R_2)$ $t'(D_2) = \sum_{P(R_2)} P(P_2 | R_2)$ $t'(D_2) = \sum_{P(R_2)} P(R_2) + (0)(0.4)$ $t'(D_2) = \sum_{P(R_2)} P(R_2) + (0)(0.4)$