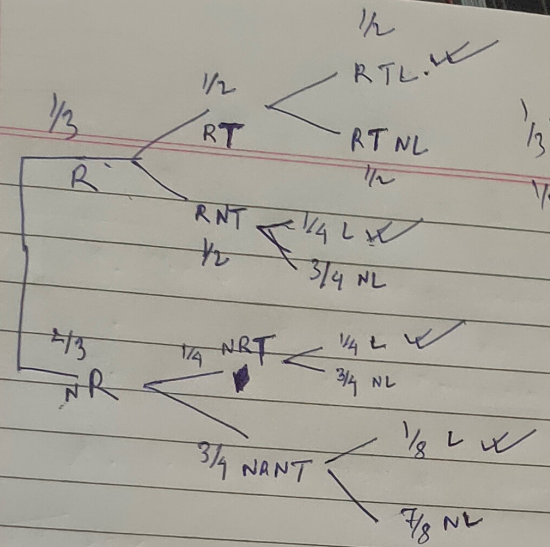
4.




$\frac{1}{3} \times \frac{1}{2} \times \frac{1}{2} + \frac{1}{3} \times \frac{1}{2} \times \frac{1}{4} = \frac{1}{12} + \frac{1}{24} = \frac{3}{24}$

L → L

(a) $P(NR \cap T \cap NL)$

$= \frac{2}{3} \cdot \frac{1}{4} \cdot \frac{3}{4}$

$= 1/8.$

(b)

$P(L) = \frac{1}{12} + \frac{1}{24} + \left(\frac{2}{3} \times \frac{1}{4} \times \frac{1}{4}\right) + \left(\frac{2}{3} \times \frac{3}{4} \times \frac{1}{8}\right)$

$= \frac{1}{12} + \frac{1}{24} + \frac{1}{24} + \frac{1}{16}$

$= \frac{1}{12} + \frac{2}{24} + \frac{1}{16}$

$= 2/12 + 1/16$

$= 1/6 + 1/16 = 11/48$

16
8
96
6

$P(R \cap L) = 1/12 + 1/24 = \frac{2+1}{24} = 3/24 = 1/8$

(c)

$P(R|L) = \frac{P(R \cap L)}{P(L)}$

$= \frac{1/8}{11/48}$

$= 1/8 \times \frac{48}{11}$

$= 6/11.$

(b) done