$\boxed{2}$

$\begin{bmatrix} 3R \\ 2\Delta \ 4v \end{bmatrix}$ $\xrightarrow[\Delta]{R}$ $\begin{bmatrix} 2R \\ 2\Delta \ 4v \end{bmatrix} u_1$ $\qquad P(u_1) = \dfrac{3}{9}$

$\qquad\qquad\qquad\qquad \begin{bmatrix} 3R \\ 1\Delta \ 4v \end{bmatrix} u_2$ $\qquad P(u_2) = \dfrac{2}{9}$

$\qquad\qquad\qquad \searrow_v \begin{bmatrix} 3R \\ 2\Delta \ 3v \end{bmatrix} u_3$ $\qquad P(u_3) = \dfrac{4}{9}$

a) $\quad \Delta = \text{"}2R, 1v\text{"}$

$P(\Delta) = P(\Delta/u_1) P(u_1) + P(\Delta/u_2) P(u_2) + P(\Delta/u_3) P(u_3)$

$P(\Delta/u_1) = \dfrac{2}{8} \ \dfrac{4}{7} \ \dfrac{4}{6} \ \binom{3}{2} = \dfrac{1}{42} \ \dfrac{3!}{2!} = \dfrac{6}{42 \cdot 2} = \dfrac{3}{42} = \dfrac{1}{14}$

$P(\Delta/u_2) = \dfrac{3}{8} \ \dfrac{2}{7} \ \dfrac{4}{6} \ \binom{3}{2} = \dfrac{3}{42} \ \dfrac{3!}{2!} = \dfrac{9}{42} = \dfrac{3}{14}$

$P(\Delta/u_3) = \dfrac{3}{8} \ \dfrac{2}{7} \ \dfrac{3}{6} \ \binom{3}{2} = \dfrac{3}{56} \ \dfrac{3!}{2!} = \dfrac{9}{56}$

b)

$\begin{bmatrix} 3R \\ 2\Delta \ 4v \end{bmatrix}$ $\xrightarrow[2\Delta]{2R}$ $\begin{bmatrix} 1R \\ 2\Delta \ 4v \end{bmatrix} u_1$ $\qquad P(u_1) = \qquad = \dfrac{3! \cdot 2! \cdot 3!}{8! \cdot 9!} = \dfrac{3 \cdot 2}{9 \cdot 8}$

$\qquad\qquad\qquad\qquad 4v \ \ u_2$ $\qquad P(u_2) =$
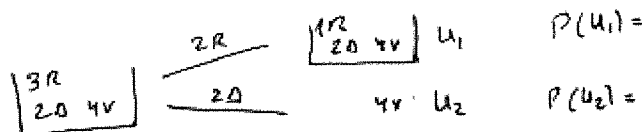
$u_2 \cup u_4 \cup u_6 / B) = P(u_2|B) +$

$P(u_2/B) = \dfrac{P(B/u_2) P(u_2)}{P(B)} \overset{0}{=} 0 \qquad P(u_4|B) =$