

Corbin weir HW #2

#1

$$1) \frac{0.002 + 0.02 + 0.001}{3} = \boxed{0.007667}$$

$$2) P(A|D) = \frac{P(A \cap D)}{P(D)} = \frac{0.002/0.023 \cdot 0.007667}{0.007667} = \boxed{\begin{matrix} P_A = 0.087 \\ P_B = 0.87 \\ P_C = 0.043 \end{matrix}}$$

$$3) 0.002 \cdot 0.5 + 0.02 \cdot 0.1 + 0.001 \cdot 0.4 = \boxed{0.0034}$$

$$4) \frac{0.5 \cdot 0.002}{0.0034} = 0.294$$

$$\boxed{\begin{matrix} P_A = 0.294 \\ P_B = 0.588 \\ P_C = 0.118 \end{matrix}}$$

$$\frac{0.02 \cdot 0.1}{0.0034} = 0.588$$

$$\frac{0.001 \cdot 0.4}{0.0034} = 0.118$$

#2 0.05

$$\frac{95}{100} \cdot \frac{94}{99} \cdot \frac{93}{98} \cdot \frac{92}{97} = \boxed{0.812}$$

$$\#3 \quad \frac{0.7 \cdot 0.268}{0.7 \cdot 0.268 + 0.3 \cdot 0.135} = \boxed{0.822}$$

$$2) \quad \frac{0.7 \cdot 0.732}{0.7 \cdot 0.732 + 0.3 \cdot 0.865} = \boxed{0.664}$$

$$3) \quad \frac{0.3 \cdot 0.268}{0.3 \cdot 0.268 + 0.7 \cdot 0.135} = \boxed{0.470}$$

$$4) \quad \frac{0.3 \cdot 0.732}{0.3 \cdot 0.732 + 0.3 \cdot 0.865} = \boxed{2.66}$$

#4

$$\frac{10!}{(10-4)! \cdot 4!} = \frac{10!}{6! \cdot 4!} = \boxed{210}$$

$$\frac{3}{10} \cdot \frac{2}{9} \cdot \frac{2}{8} \cdot \frac{3}{7} = \boxed{0.007}$$