$$\frac{pr\,(H_1 \mid D_2, D_1)}{pr\,(H_2 \mid D_2, D_1)} =$$

$$\frac{pr\left(H_1 \mid D_2 \bigcap D_1\right)}{pr\left(H_2 \mid D_2 \bigcap D_1\right)} = \frac{pr\left(H_1 \mid D_2 \bigcap D_1\right)}{pr\left(H_2 \mid D_2 \bigcap D_1\right)} = \frac{pr\left(D_2 \bigcap D_1 \mid H_1\right) * pr\,(H_1)}{pr\left(D_2 \bigcap D_1\right)} * \frac{pr\left(D_2 \bigcap D_1\right)}{pr\left(D_2 \bigcap D_1 \mid H_2\right) * pr\,(H_2)} =$$

$$\frac{pr\left(D_2 \bigcap D_1 \mid H_1\right)}{pr\left(D_2 \bigcap D_1 \mid H_2\right)} * \frac{pr\,(H_1)}{pr\,(H_2)} = \frac{pr\,(D_2 \mid H_1)\,P\,(D_1 \mid H_1)}{pr\,(D_2 \mid H_2)\,P\,(D_1 \mid H_2)} * \frac{pr\,(H_1)}{pr\,(H_2)}$$