Jordan Landers
May 8, 2018
Unit 3, Lesson 2, Drill 2

1. $P(B|A) * \dfrac{P(A)}{P(B)} = \dfrac{P(B|A)P(A)}{P(A)P(B|A) + P(\sim A)P(B|\ A)}$

$P(B) = P(A)P(B|A) + P(\sim A)P(B|\sim A)$

$$P(+) = P(TD^+)P(+|TD^+) + P(-)P(TD^+|-)$$
$$= (.005)(.98) + (1 - .005)(.1)$$
$$= .1044$$

2. $P(+|TD^+) = P(B|A)$

$$= .98$$

3. $P(\sim B|\sim A) = 1 - P(B|\sim A)$

$P(-|TD^- = 1 - .1$

$$= .9$$

4. $1 - (P(A \cap B) + P(\sim A \cap \sim B))$

$1 - (P(A|B)P(B) + P(\sim A|\sim B)P(\sim B))$

$1 - (P(B|A)P(A) + P(\sim B|\sim A)P(\sim A))$

$1 - (P(B|A)P(A) + P(\sim B|\sim A)(1 - P(A)))$

$1 - ((.98)(.005) + (.9)(1 - .005))$

$= .0996$