4.7.1 Bayesian Inference - Example 1

Q: $p(H) = p$

(i) 2 → different result

(ii) diff : \$1

same : −\$1

$E(X) = ?$

Solution (i) HH, HT, TH, TT

$p(\text{diff}) = p(HT) + p(TH)$

$= 2p(1-p)$

(ii) $E(X) = 2p(1-p) \times 1 - [1 - (2p(1-p)] \times 1$

$= 2p - 2p^2 - 1 + 2p - 2p^2$

$= 4p - 4p^2 - 1$

$= 4p(1-p) - 1$