

114. A diagnostic test for the presence of a disease has two possible outcomes: 1 for disease present and 0 for disease not present. Let X denote the disease state of a patient, and let Y denote the outcome of the diagnostic test. The joint probability function of X and Y is given by:

$$P(X = 0, Y = 0) = 0.800$$

$$P(X = 1, Y = 0) = 0.050$$

$$P(X = 0, Y = 1) = 0.025$$

$$P(X = 1, Y = 1) = 0.125$$

Calculate $\text{Var}(Y|X=1)$.

- (A) 0.13
- (B) 0.15
- (C) 0.20
- (D) 0.51
- (E) 0.71