Example 1.17

$$E[X \mid Y=0] = \sum_{x_i=0}^{2} x_i \, P_{X/Y}(x_i \mid 0)$$

$$= 0 \cdot \frac{1}{2} + 1 \cdot \frac{1}{2} + 2 \cdot 0 = \frac{1}{2}$$

$$E[X \mid Y=1] = 1 \qquad E[X \mid Y=2] = \frac{3}{2}$$