

Recitation 21

Problem 1

(a) $E_x(2 \text{ Die})$

$E_x(2 \text{ Die} | \text{Double})$

$$= 2 \cdot \frac{1}{6} + 4 \cdot \frac{1}{6} + 6 \cdot \frac{1}{6} + 8 \cdot \frac{1}{6} + 10 \cdot \frac{1}{6} + 12 \cdot \frac{1}{6}$$

$$= 7$$

$\cdot \Pr(\text{Double})$

$$(b) E_x(2 \text{ Die}) = E_x(2 \text{ Die} | \text{Double})_{\text{II}} + E_x(2 \text{ Die} | \text{Diff})_{\text{V}}$$

$$E_x(\text{Dice}) + E_x(\text{Dice}) = 7 \cdot \frac{8}{11} + E_x(2 \text{ Die} | \text{Diff}) \cdot \frac{5}{11}$$

$$\neq$$

$$(c) E_x(\text{Advance}) = E_x(u_1 | \bar{E}_1) \cdot \Pr(\bar{E}_1)$$

$$+ E_x(u_1 + u_2 | E_1 \cap \bar{E}_2) \cdot \Pr(E_1 \cap \bar{E}_2)$$

$$+ E_x(u_1 + u_2 + u_3 | E_1 \cap E_2 \cap \bar{E}_3) \cdot \Pr(E_1 \cap E_2 \cap \bar{E}_3)$$

$$+ \dots$$

???

$$(d) 7 \cdot \frac{5}{f_6} + (7+7) \frac{5}{f_{12}} + (7+7+7) \frac{5}{f_3} = 8 + \frac{19}{f_2}$$