

## 1/10 Exercises

① a) 52. Sample Space

b)  $E_1 = \{JS, QS, KS, JC, QC, KC\}$

c)  $E_2 = \{5H, 5D, 10H, 10D\}$

d)  $E_3 = \{AD, 2D, 3D, \dots, KDAH, 2H, 3H, \dots, KH, 5C, 10C, 5S, 10S\}$

e)

$$P(E_1) = \frac{6}{52}$$

$$P(E_2) = \frac{4}{52}$$

$$P(E_3) = \frac{30}{52}$$

Suppose  $E_1$  and  $E_2$  are mutually exclusive.

no outcome is in  
both

$$\text{The } P(E_1 \cup E_2) = P(E_1) + P(E_2)$$

function

$$f: \mathbb{R} \rightarrow [0, \infty)$$

$$f(x) = |x|$$

$$f(-3) = 3$$

$$P: \{\text{all events}\} \rightarrow [0, 1]$$

Event  $A$ . Complement of  $A$  is  
the set of all outcomes not in  $A$ ,  
Denoted by  $A'$ .

$$P(A') = 1 - P(A)$$

1/10 Exercise #2

$$a) (5)(3) = 15$$

$$e) E_3 = \{1A, 2A, 3A\}$$

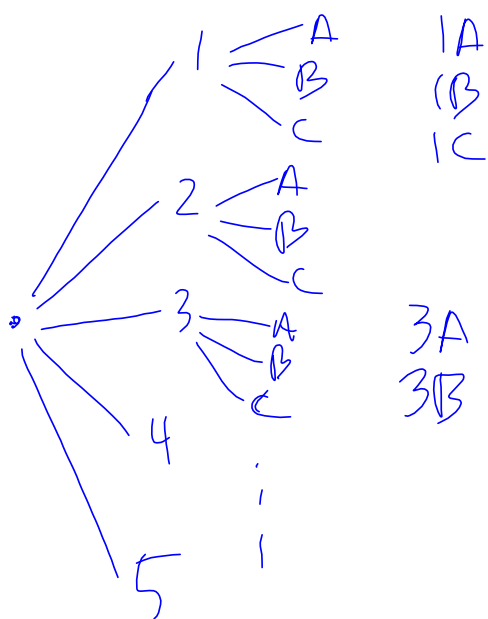
$$b) S = \{1A, 1B, 1C, 2A, 2B, 2C, 3A, 3B, 3C, 4A, 4B, 4C, 5A, 5B, 5C\}$$

$$f) P(E_1) = \frac{6}{15}$$

$$c) E_1 = \{2A, 2B, 2C, 4A, 4B, 4C\}$$

$$P(E_2) = \frac{11}{15}$$

$$d) \bar{E}_2 = \{1A, 2A, 3A, 4A, 5A, 1B, 2B, 3B, 1C, 2C, 3C\} \quad P(E_3) = \frac{3}{15}$$



1A  
1B  
1C  
  
2A  
2B  
2C  
  
3A  
3B  
3C

$$\underline{5} \cdot \underline{3} = 15$$

1/10 Exercise #3

a)

b)

c)

d)