

1. An experiment is to select a letter from the word **MATHEMATICS**. Give the probability distribution for this experiment.

Sample space	M	A	T	H	E	I	C	S
probability	$\frac{2}{11}$	$\frac{2}{11}$	$\frac{2}{11}$	$\frac{1}{11}$	$\frac{1}{11}$	$\frac{1}{11}$	$\frac{1}{11}$	$\frac{1}{11}$

2. Use the following information in the probability distribution to answer these questions.

S	a	b	c	d	e	f
prob.	0.1	0.2	0.15	0.25	0.18	0.12

$$E = \{a, c, e\} \quad G = \{b, c, d, e\} \quad H = \{b, d, f\}$$

(a) $P(H^C) = 0.1 + 0.15 + 0.18 = 0.43$

(b) $P(H \cap G) = 0.2 + 0.25 = 0.45$

3. This table classifies the English, History, Math, and Poly Sci majors at State U according to their year. (There are no double majors.) A student is selected at random, find the probability that

- (a) the student is a Poly Sci major or a Junior.

$$\frac{181 + 155 - 41}{713} = \frac{295}{713}$$

- (b) the student is not a junior and is an english major or a math major.

$$\frac{64 + 35 + 41 + 29 + 32 + 69}{713} = \frac{270}{713}$$

	Fresh.	Soph.	Jr.	Sr.	Totals
English(E)	64	35	31	41	171
History(H)	55	41	33	52	181
Math(M)	29	32	50	69	180
Poly Sci(PS)	70	33	41	37	181
Totals	218	141	155	199	713