MAT1372, Quiz3, Fall2025

ID:_____ Name:_____

1. The attached table describes the distribution of a random sample S of 100 individuals, organized by sex assigned at birth and whether they are right- or left-handed.

	Right-handed	Left-handed
Males	43	9
Females	44	4

Let's denote the events M = the subject is male, F = the subject is female, R = the subject is right-handed, L = the subject is left-handed. Compute the following probabilities:

(a) $P(M)$, (b) $P(L)$, (c) $P(M \text{ and } R)$, (d) $P(F \text{ or } L)$, (e) $P(M \text{ and } F)$

(a) $P(M) = \frac{43}{100} + \frac{9}{100} = \frac{52}{100}$

(b) $P(L) = \frac{9}{100} + \frac{4}{100} = \frac{13}{100}$

(c) $P(M \text{ and } R) = P(\text{a right-handed male}) = \frac{43}{100}$

(d) $P(F \text{ or } L) = P(\text{a female or a left-handed})$

$= \underbrace{\frac{44}{100} + \frac{4}{100}}_{\text{female}} + \frac{9}{\text{left-handed}} = \frac{57}{100}$

(e) $P(M \text{ and } F) = 0$ since one cannot be both male and female in this case.