Name: _____

MATH 100
Fall 2022
HW 15: Due 11/07

"Life is a school of probability."
– Walter Bagehot

Problem 1. (10pt) Researchers surveyed 320 people on which superpower from comics they found most interesting/best. A table of their findings are found below.

	Child	Adult	Total
Flight	30	36	66
Mind Reading	15	60	75
Super Strength	40	14	54
Total	85	110	195

(a) Find the probability that a person chose flight as the best superpower.

(b) Find the probability that a person surveyed was a child.

(c) Find the probability that a person was a child and chose super strength as the most interesting super power.

(d) Find the probability that a person chose mind reading or was an adult.

(e) Find the probability that a person that chose mind reading was an adult.

Problem 2. (10pt) Consider the breakdown of students majors at a college by gender.

	School of Business	School of Education	Arts & Social Sciences	STEM
Male	80	85	75	92
Female	75	80	90	94
Unspecified	8	15	22	1

(a) Find the probability that a randomly selected person from this school was in education.

(b) Find the probability that a randomly selected person from this school was male.

(c) Find the probability that a randomly selected person from this school was a female and in the School of Business.

(d) Find the probability that a randomly selected person from this school was in STEM or had unspecified gender.

(e) Find the probability that a person was in the school of Arts & Social Sciences given that their gender was unspecified.

Problem 3. (10pt) Is it always true that for events A and B, $P(A \text{ and } B) = P(A) \cdot P(B)$? Explain using an original example.