

MATH1530 – Practice Test

- Circle which of the following values **cannot** be probabilities?
1.5 -0.785 0.785 1 $\frac{9}{7}$ $\frac{3}{8}$ $\sqrt{5}$ $\sqrt{0.04}$
- John runs a computer software store. Yesterday he counted 127 people who walked by his store, 58 of whom came into the store. Of the 58, only 25 bought something in the store.
 - Estimate the probability of event A, that a person who walks by the store will enter the store.
 - Estimate the probability of event B, that a person who walks into the store will buy something.
 - Estimate that probability of event C, that a person who walks into the store will buy nothing.
- How do people want to be treated when they have the flu? A study of 1000 people gave the following information: 770 wanted to be left alone, 160 wanted to be waited on hand and foot, and 70 wanted to be treated some other way.
 - What is the probability of selecting a person at random and finding a person who wanted to be waited on hand and foot?
 - What is the probability of selecting a person at random and finding a person who did not want to be waited on hand and foot?
- A person tosses a coin three times and records whether it comes up heads or tails.
 - Draw a tree diagram and list the eight different possible outcomes.
 - What is the probability of tossing **exactly two heads** in three tosses?
 - What is the probability of tossing **at least one head** in three tosses?
- What does it mean to say that events A and B are **mutually exclusive (disjoint)** events?
- List all the possible values for the last digit of a telephone number.
 - If we randomly select the last digit of a telephone number, what is the probability that it is a number **greater than 4**?
 - What is the probability that it is an **even number**?
 - What is the probability that it is both an **even number** and a number **greater than 4**?
- Data was collected on a group of sales representatives who tried two approaches to selling a customer a new automobile: the aggressive approach and the passive approach. From 1160 customers, the passive approach was tried on 660 of them, and of these 416 sales were made. The aggressive approach was tried on the remainder of customers, and of these 310 no sales were made.
 - Construct a contingency table for this information.If a customer is selected at random from this group,
 - What is the probability that **a sale was made to the customer**?
 - What is the probability that **the aggressive approach was used with the customer**?
 - What is the probability that **the passive approach was used** and that **no sale was made to the customer**?
 - What is the probability that the **aggressive approach was used** or that **no sale was made to the customer**?
- Given that $P(A) = 0.3$, $P(B) = 0.6$ and $P(A \text{ and } B) = 0.2$,
 - Find $P(A \text{ or } B)$
 - Find $P(\bar{B})$
 - Are events A and B mutually exclusive? Explain.
 - Are events A and B statistically independent? Explain.
- Assuming that girl and boy births are equally likely AND independent then, out of eight births, find the following
 - Find the probability of exactly 5 girl births
 - Find the probability of exactly 0 girl births
 - Find the probability of having less than 4 girl births
 - Find the probability of having 6 or more girl births
- What is the probability of randomly selecting a red pen OR a black pen from a box containing 6 red pens, 3 black pens, and 2 blue pens?
- In #10 what is the probability of selecting a red pen, then a blue pen and then a black pen (in that specific order)
- The probability of finding a defective computer chip is 0.35. What is the probability that three randomly selected computer chips will **NOT** have any defective chips?