



DEPARTMENT OF MATHEMATICS

PROBLEM SOLVING CHALLENGE

OCTOBER 2019

Challenge 1

Junior Cycle

Tessa has a standard deck of cards. She picks one card from the deck at random and leaves it out of the deck before drawing the next card. If the first card she draws is a heart, find the probability that:

- the next card drawn is also a heart.
- the next card drawn is a spade.
- the next two cards drawn are black cards.



Challenge 2

Senior Cycle

Liam decides to make a Subway sandwich. You can only choose exactly 2 meats and 4 salad items. (He picks one bread and one sauce)

Bread	Meats	Salad items	Sauce
Multigrain wheat	Plain chicken	Lettuce	Southwest
Italian	Chicken tikka	Cucumber	Light mayo
Italian cheese & herb	Beef	Olives	Caesar
Flatbread	Meatball	Tomato	Sweet chili
9-grain honey & oat	Bacon	Egg	
	Ham	Onion	
	Pepperoni	Jalapeños	
		Pickles	
		Sweetcorn	
		Cheese	

- Liam chooses a Multigrain sandwich with bacon and plain chicken, lettuce, tomato, onion and cheese. He then chooses southwest sauce. Find the probability that if a sandwich was made at random that it would be Liam's choice.
- Find the probability that a sandwich made a random has plain chicken and egg.
- Find the probability that a sandwich made at random does not have any cheese or olives but does have light mayo sauce.

Answers on an A4 sheet with your Name, Year and Class should be given to Mr. McManus or to Mr. McEvoy in room 33 before 4pm on Friday 1st of November.

Monthly Prize for both **Junior** and **Senior Cycle**.*

Good Luck.

Junior Cycle students do challenge 1 only.

Senior Cycle students do challenge 2 only.