Hello Class, While searching for waves I came across **longitudinal waves. Examples of longitudinal waves are sound waves, ultrasound waves, and seismic P-waves. I picked to discuss ultrasound waves in everyday life. Ultrasound waves are used for looking inside the body, by using high frequencies. Ultrasound wave sounds effect the human body by causing “headaches** dizziness, balance disturbances, tinnitus and fatigue” (Pawlaczyk-Łuszczyńska & Smagowska, 2015).

A large CME will impact my life and community by causing radiation poisoning to humans and animals around the community, which can cause death. A couple of things we can do to prepare for the emergency is having icepacks or freezing water bottles to keep food cold, because of the power outage, having all of your devices charged, and keeping gas in your car.

I think we should put more effort in to colonizing mars more than the moon, because it is the closest planet that can compare to Earth. Even though it may be further away, I think we have a better shot at colonizing Mars than the moon. I would also go on a trip to Mars, but if I could never return that will make a big difference in my decision. If I couldn’t return, I would go. I think more needs to be done to prevent climate change getting worse. I know more electric cars are being made, and by certain years cities will prioritize them, but I think there is a lot more we can do.

Byrd, D. (2021) *Are solar storms dangerous to us?: Space*, *EarthSky*. Available at: https://earthsky.org/space/are-solar-storms-dangerous-to-us/#:~:text=Very%20high%2Denergy%20particles%2C%20such,Large%20doses%20could%20be%20fatal. (Accessed: January 21, 2023).

Pawlaczyk-Łuszczyńska, M. and Smagowska, B. (2015) *Effects of ultrasonic noise on the human body-A bibliographic review*, *Taylor & Francis*. Available at: https://www.tandfonline.com/doi/abs/10.1080/10803548.2013.11076978 (Accessed: January 21, 2023).

I want a to create a PIN for my new phone. I can pick 4 numbers, and I can choice between 0-9 so that make 10 numbers I can choose from. How many different combinations and permutations are there that I can choose from?

r = 4

n = 10

Permutations

Formula = P(n,r) = (n!) /(n-r)!

P = (4,10) = (10!)/((10-4)!4!)

P = 5,040

Permutation Problem:

My daughter has picked the 3 friends she wants to invite over for the sleep over, and they are going to have their set up in her room. There are 10 different ways their sleeping bags can be set up. How many permutations are there to set up the sleeping bags?

Formula = P(n,r) = (n!) /(n-r)!

P(10,3) = (10!)/(10-3)!

P(10,3) = 720

Combinations

(10!)/((4!\*(10-4)!))

C = 210

Hello Kathi, I like your discussion topic for this week on Ocean Waves. It’s crazy how many things causes ocean waves, like you said it can be just the wind or even a volcanoes vibration. I think a couple of things we can do to prepare for the emergency is having icepacks or freezing water bottles to keep food cold, because of the power outage, having all of your devices charged. I also like your take on global warming, we could have be prioritizing it but it may be too late.