

1. Explorer for the British Navy. operated in the late 1700s 1760s to 1789. Notable for being the first European to reach Australia and Hawaii. First documented case of people reaching the arctic ice wall. Reached the arctic circle. Charted much of the pacific.
2. It was an opportunity for astronomers to observe Venus in front of the sun allowing for information to be gleaned about the earth's position in relation to the sun. This had to be done close to the arctic to provide a data point distant enough from the previous to give more accurate data. The other reason for travelling to the south pole was to confirm the existence of the Antarctic and its possible use for the British Empire.
3.
 - a. 84.26 Yr
 - b. 1.52 AU
 - c. Provided a value that could be used, before that there was no way of knowing the exact distance, just ratios. With knowledge of the earth's distance from the sun those ratios can then be used to find actual values.
4. On the Belgica, it was the first venture into the arctic to last through the winter, it also helped pioneer treatment for scurvy by eating raw meat from local animals. The Fran pioneered a method of using ice to carry the vessel to the desired destination. In the case of this expedition using it to carry the vessel closer to the north pole with minimal effort. The Gjoa introduced many survival techniques of the netsilik to Amundsen, his crew and the wider Arctic explorer knowledge base. Also crossed the northwest passage. The Discovery discovered and helped develop many theories and scientific information about magnetism biology and astronomy.
5. Both were predecessors of the modern inuit establishing much of the cultural and survival techniques used. These included hunting techniques and diet. Including eating seals and other animals particularly raw or undercooked for scurvy prevention. Utilizing bones of whales and other animals for boats. Using snow and ice to create shelters to keep warm. And specific clothing to keep warm.

6. Native American tribe in the north west of current day U.S. .Captain Cook interacted with them at Cape foulweather.
7. In Interacting with other cultures especially for the first time the risk for misunderstanding is vast. When there is no basis on interactions it becomes trivial to make grave mistakes that while unintentional can become deeply offensive to others. This is what happened to James Cook, misunderstanding led to conflict which led to bloodshed. While this is the case the benefits of breaching this barrier are great. Knowledge from both cultures can be exchanged letting everyone be better off. This can be seen in Captain Amundesen's interactions with the netsilik where much of his knowledge about arctic survival came from.

2

1. $(2\text{kg} \cdot 1000\text{g}/1\text{kg}) \cdot 9 \text{ kcal}/1\text{g} = 18000 \text{ kcal}$
2. $(500 \text{ kcal}/(4 \text{ kcal/g})) \cdot 1\text{kg}/1000\text{g} = 0.125 \text{ kg}$
3. $1000\text{kg} \cdot 9.8\text{m/s}^2 \cdot 0.1 \cdot 5000\text{m} = 4900000 \text{ J}$
4. $4900000 \text{ J} / 10 = 490000 \text{ J} / (9 \text{ kcal/g} \cdot 4184 \text{ J/kcal}) = 13.01 \text{ g} = 0.013 \text{ kg}$
5. Scurvy caused by vitamin c deficiency. This is caused due to the lack of fresh food in the arctic.

3

1. $60 \cdot 2.5 = 150$
2. $400 \text{ km} / 6371 \text{ km} = 0.063 \cdot 180/\pi = 3.61$
3. $(1.5 \cdot \pi/180) \cdot 6371 \cdot \cos(60) = 83.4 \text{ km}$
4. $10^48 = 480 \text{ nm}$

4

1. The British put more focus onto scientific research allocating more crew and resources to such aspects of their journey. This contacts the Norweigans who did no research on their expedition and tended to keep light on supplies. The British relied on snow shows and tended to not utilize dog sleds. This contrasted the Norwegian methods of heavily relying on dogs. The Norwegians were more willing to utilize knowledge they gained from the inuit in the north unlike the

British. The British had much more structured order to their operation with a clear and rigid chain of command.

2. The use of sled dogs, better skiing technique such as applying ice on the skis to make them near frictionless, better clothing such as using fur from caribou. Shelter construction for igloos. Food sources for surviving such as eating raw meat for its vitamin content.
3. Ran much of the arctic expeditions done by the British.
4. They utilized snow shoes, by wearing these shoes walking on the snow was made easier as the weight became distributed they also manually hauled their gear when not having access to pack animals. In contrast the Norwegians utilized skis allowing them to glide over the snow for longer distances, they also utilized sled dogs to haul gear.
5. Food shelter and navigation would be critical. Food would be scarce and conserving it while navigating snow which can become incredibly draining would be a challenge. Combined with the fact that all food once inland would have to be preserved lacking vital nutrients would be deadly. Shelter would be a challenge, it is cold and there is nothing to remedy that. Snow would be a killer as it gets on clothes making it damp from the body heat further worsening the temperature problem. Navigating would be a challenge, the only reliable methods would be the tools at my disposal, navigation through landmarks would be impossible as the entire environment is coated white making any kind of major landmark invisible or not present.
6. Ranald MacDonald visited Japan and gained their trust by not appearing to be another foreigner. Coming from native American background his appearances were not as alien to the Japanese as the many European merchants trying to gain access to Japanese ports and goods. Using this trust he taught some members of the Japanese court English so that they may speak it to American ambassadors who would visit.
7. An example of what happens when the wisdom keepers fail to recognize change is with the British admiralty with the arctic expedition. The admiralty higher ups making the decisions on who should be in charge of what jobs and allocating

what resources failed to see what was needed. In their stubbornness they didn't recognize a better path to their goals resulting in failure.

5

1. When Nansen first crossed Greenland it was the first major arctic exploration accomplishment done by a norwegian. This brought a great win for the already growing Norwegian national identity that was being formed after being part of Sweden for 30 years.
2. yes , building on Robert Mclure who discovered it.
3. Many scientific discoveries including the fossil of a plant indicating that the land mass at one point hosted forests and plant life. And the location of the south magnetic pole.
4. For navigation, knowing the exact location of the north and south pole can help. As they are not directly at the north or directly south of the earth, knowing their offset can assist in error that might occur from assuming it is directly north or south.

6

1. Primary emotions are innate while secondary emotions are learned.
2. They protect you from yourself, through training you can react in ways that are rational preventing irrational thought from making further mistakes

7

1. It shows to me that people have always been exploring and navigating. No matter the people or where they come from, something us to these desolate wastelands. Humans have an innate desire to explore and this can be seen through humanity's presence in the arctic circle and the persistence despite nature's insistence to exist and thrive.
2. While I would like to know everything there is to drawing, I highly doubt I could. My path is firmly set is tech that is where I devote the most of my academic time to and it probably where I will devote most of my work life to as well. The world of art is just as vast as tech yet for me being only one person with one life I have to choose. It's like being in the Atlantic Ocean and wanting to be in the pacific. You

can only have one, and while I try and practice with what time I have I know that I never achieve the peak of knowledge when it comes to art.