

1. Early Exploration

Mack

1. He was a British explorer.
 - discovered most of Pacific
 - Sailed to Antarctic waters
 - navigated New Zealand
2. Astronomy - measuring the distance (Earth-Sun)
finding the mysterious southern continent
before the French the secret mission
3. a. $T^2 = r^3$
 $T = \sqrt{(19.22)^3} = 84.3 \text{ years}$

b. $r = \sqrt[3]{(1.88)^2} = 1.52 \text{ AU}$
c. Astronomical unit (AU)
4. = the first complete year's meteorological record from spending a winter in Antarctica
 - 261 statute miles of the North pole
 - successfully navigate the Northwest passage
 -

5. They were arctic people who survived through hunting animals on the sea like seals and whales & building huts that were designed specifically for the harsh climate they lived in.
6. The chinook are indigenous people from the pacific northwest.
7. It has great benefits & dangers. On the good side you have Barry Lopez willing to immerse in the land where he's trying to teach English and Captain Amundsen learning dog sleds and other survival techniques from the native people (Netsilik). the dangers of being like Captain Cook's death at the hand of hawians for his disrespect.

2. Survival Skills

1. 2kg of pemmican = ? kcal

• 9 kcal/g

$$\therefore 2000g \times 9 \text{ kcal/g} = 18,000 \text{ kcal} //$$

2. 500kcal = ? kg biscuits

4kcal/g - carb.

$$\frac{500 \text{ kcal}}{4 \text{ kcal/g}} = 125 \text{ g} = 0.125 \text{ kg} //$$

3. 1000kg = m

5km = s

$W = FS = \mu mgs$

0.1 = μ

$$\therefore = 0.1 \times 1000 \times 9.81 \times 5000 \\ = 4,905 \text{ kJ} //$$

4. 10 Med dogs = ? 49.05 kJ/dog

9 kcal/g 1 kcal = 4184 J

$$\therefore 49.05 \text{ kJ} / 4184 \text{ kJ} = 117.3 \text{ kcal}$$

$$117.3 / 9 = 13 \text{ g} = 0.013 \text{ kg/dog} //$$

5. Scoring which is vitamin C deficiency

3. Navigation

1. $1^\circ \text{ lat} = 60 \text{ nmi}$
 $\therefore 2.5^\circ \times 60 = 150 \text{ nmi} //$

2. $1^\circ \text{ lat} \approx 111 \text{ km}$
 $\therefore 400 / 111 = 3.6^\circ //$

3. $s = \phi R \cos \theta = 1.5^\circ \times 111 \times \cos 60^\circ$
 $= 83.25 \text{ km} //$

4. $1 \text{ knot} = 1 \text{ nmi/hr}$
 $10 \text{ nmi/hr} \times 48 \text{ hrs} = 480 \text{ nmi} //$

7. for example the reversal of row vs. wade shows how societal change can come suddenly yet be rooted in longstanding debates. the responsibility of a 'wisdom keeper' in this context could be seen as someone who works to guide committees through change by inferring from past rulings & information. Because they can be lessons applied to move forward.

5. Exploratory Achievements

1. It inspired National pride & recovery
2. Captain Amundsen was the first to complete the Northwest passage, building on the partial routes discovered by earlier explorers
3. reached new southern latitude & gathered significant scientific data, including fossil findings
4. improve navigation by understanding earth's magnetic field.

6. Survival & psychology

1. Primary emotions are instinctive responses like fear while secondary emotions are learned like excitement influenced by experience
2. Secondary emotions form emotional bookmarks which are memories that can be used to predict present/future situations by triggering appropriate emotional response which can be different or similar to memory based on that learned experience