Antarctic Math

Antarctica is c-c-cold! One reason is that each year, the southern hemisphere faces away from the sun from late March to late September. This means that Antarctica is completely dark (day and night) for many months at a time. The continent gets especially cold because it is hard for the heat from inside Earth to get through the ice sheet that covers the continent. Also, the air is so dry that there aren't many clouds to bounce the sunlight back down to Earth and warm up the continent.

Antarctica's sunlight from October to February

Antarctica's sunlight from March to September

Cold or not, Antarctica is visited by many scientists. They live together in research stations. The scientists have special machines that make electricity and clean water. These brave men and women study the animals and plants in this extreme land. They conduct experiments on water and weather. They make many measurements.

Scientists use math to make sense of facts, such as changes in penguin populations. But every scientist was once a student, exploring how math works. The math they learned in school is their tool kit. They've added new tools over time, and they've practiced problems like the ones on the next page.

Antarctica Math

± Adding or Subtracting

The highest point on Antarctica is a mountain called Vinson Massif. It is 16,066 feet (4,897 meters) above sea level.[1] The lowest point is Bentley Subglacial Trench, which is 8,333 feet (2,540 meters) below sea level.[2]

What is the distance between the highest and lowest point? _____

× Multiplying

Emperor penguins' wings, shaped like flippers, help them "fly" at underwater speeds of up to 16mph.[3]

Based on this fact, about how far could a penguin travel in three hours? _____

_____

÷ Dividing

The sun sets on the South Pole in late March and does not rise until late September.
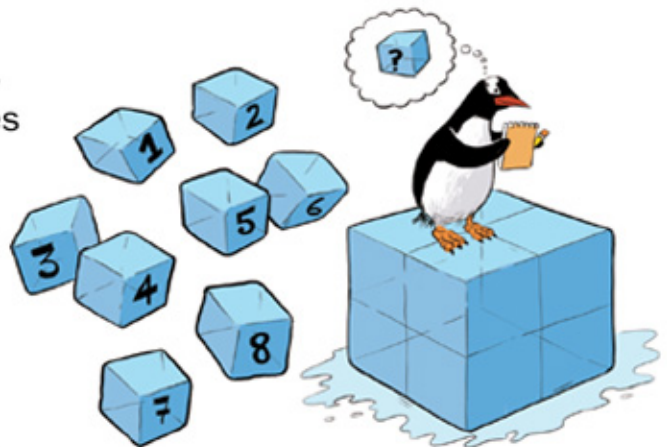
How many months of darkness is that? _____

What fraction is that of one year? Reduce to lowest terms. _____

% Finding Percentage

About 98 percent of Antarctica is covered in ice.[4] **What percentage of land is not covered?**

_____

x³ Finding Volume

The Antarctic ice sheet is the largest block of ice on Earth. It contains about 7.2 million cubic miles (30 million cubic kilometers) of water.[5] Volume is measured in cubic units. The volume of something is the number of "cubes" needed to fill it completely, much like ice cubes in a box. The volume of a cube equals "side times side times side." **So if a square has one side of 4 inches, what is its volume, in cubic inches?**

_____

🐧 The South Pole is thousands of feet and meters above sea level because of its thick ice!

Sources: 1. "The World Factbook." Central Intelligence Agency. 2. Ibid. 3. Minneci, Beth. "Welcome to to the Ranch." *The Antarctic Sun*, 10 Dec 2000, page 6. 4. "Antarctica." www.gma.org. 5. "Quick Facts on Ice Sheets." nsidc.org.