

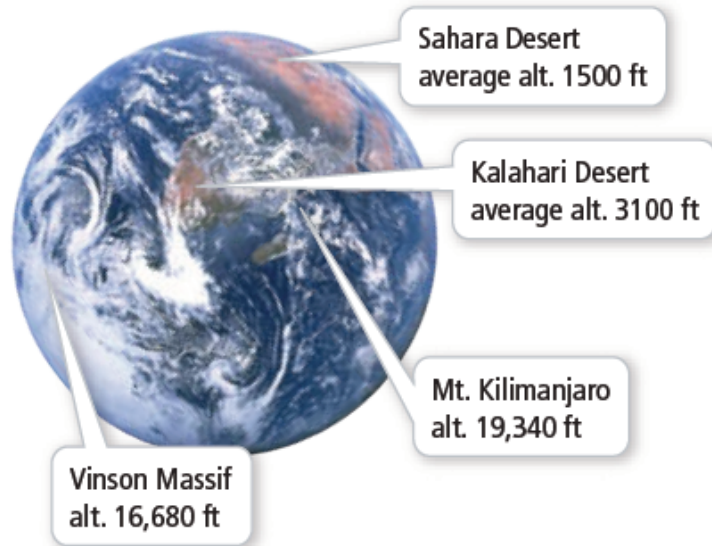
Algebra 2 - Rational Functions - Extensions

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1. **Apply Mathematics (1)(A)** The formula $p = \frac{69.1}{a + 2.3}$ models the relationship between atmospheric pressure p in inches of mercury and altitude a in miles.

Use the data shown with the photo. At which location does the model predict the pressure to be about 23.93 in. of mercury? (*Hint*: 1 mi = 5280 ft.)

- A. Sahara Desert
- B. Kalahari Desert
- C. Mt. Kilimanjaro
- D. Vinson Massif



2. **Identify the error(s) in planning the solution or solving the problem. Then write the correct solution.**

Use polynomial division to divide $x^4 + x^3 - 7x - 3$ by $x + 3$. What is the quotient and remainder?

$$\begin{array}{r}
 x^3 - 2x^2 - 1 \\
 x + 3 \overline{) x^4 + 1x^3 - 7x - 3} \\
 \underline{x^4 + 3x^3} \\
 -2x^3 - 7x \\
 \underline{-2x^3 - 6x} \\
 -1x - 3 \\
 \underline{-1x - 3} \\
 0
 \end{array}$$

The quotient is $x^3 - 2x^2 - 1$ with remainder 0.

Find the error(s).