Quiz #5   Name: _____Key_____

You must show your work to get full credit.

Assume the weight, W, of a Boa constructor is proportional to the cube of its length, L. A Boa of length 6 feet weights 8.5 pounds.

1. Give a formula for the weight of Boa of length L.

As W is proportional to L^3 $W = \underline{\;.03935\; L^3\;}$ lbs.

we have

$$W = k\, L^3$$

when $L = 6$, $W = 8.5$ so

$$8.5 = k\, 6^3$$

$$k = \frac{8.5}{6^3} = .03935$$

2. In 2009 scientists found 60 million year old fossils in Columbia South America of a Boa, which they named Titanoboa, that was about 40 feet long. Estimate the weight of Titanoboa.

Weight of Titanoboa is about: _____2518.5 lbs._____

Let $L = 40$ in our formula.

$$W = .03935\, L^3 = 2518.5$$