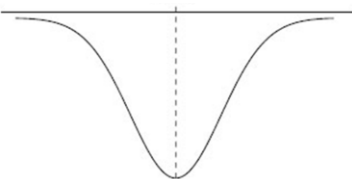


Shade the region of the curve that represents this probability.

A turtle is chosen at random. Find the probability that it weighs less than 37 kg.

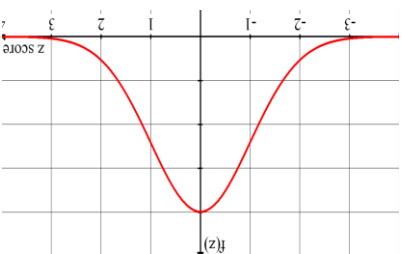


The weights of Kemp's ridley (*Leptochelys kempi*) sea turtles observed off the coast of Florida are normally distributed with a mean of 45 kg and a standard deviation of 4 kg.

**Example**

**Properties of the Normal Curve**

- The curve is \_\_\_\_\_
- It is symmetrical about the \_\_\_\_\_.
- The mean, median, and mode are the \_\_\_\_\_.
- The area under the curve represents \_\_\_\_\_ of the data.
- The Empirical Rule states \_\_\_\_\_ of the data lies within one, \_\_\_\_\_ within two, and \_\_\_\_\_ within three standard deviations from the mean.



deviation.

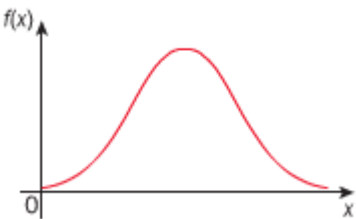
Set the mean to \_\_\_\_\_ and each 1 unit of the x-axis is \_\_\_\_\_ standard

$$Z = \frac{x - \mu}{\sigma}$$

This is done through the formula: \_\_\_\_\_, in each situation. by finding the normal deviate, or standardize the normal distribution deviation of the data, we can Using the mean and standard deviation.

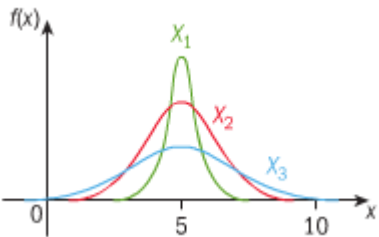
**Z-Scores**

**The Normal Curve**



There is no one normal curve; it will

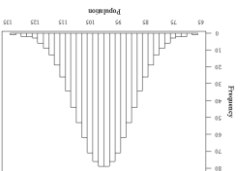
\_\_\_\_\_ depending on the spread of the data, or \_\_\_\_\_.



**Example**

The lengths of adult Loggerhead sea turtle shells follow a normal distribution. It is known that 20% of these turtle shells have a length less than 85 cm and 10% have a length greater than 103 cm. Find the value of the mean  $\mu$  and the standard deviation  $\sigma$ .

The **normal distribution** is suitable for many naturally occurring variables and one of the most important distributions in statistics!



Name: \_\_\_\_\_

**What is Normal, Anyway?**

**Basic Stat Vocabulary**

Define the following terms, in your own words:

1. Population
2. Sample
3. Random Sample
4. Mean ( $\mu$ )
5. Variance ( $\sigma^2$ )
6. Standard Deviation ( $\sigma$ )