

Name: _____

Laying eggs...



Could it be normal?

Use the data summary below, Loggerhead (*Caretta caretta*) sea turtle nesting dates along Jupiter-Carlin Beach from 2010-2015, to complete the following tasks.

Nesting Date Window	Interval for the Day of the Year	Mid-Interval Day of the Year	Number of Observed Nests (Frequency)	Cumulative Frequency
April 1-15	91 – 105	$\frac{91 + 105}{2} = 98$	1	1
April 16-30	106 – 120	$\frac{106 + 120}{2} = 113$	41	41 + 1 = 42
May 1-15	121 – 135		409	
May 16-31	136 – 151		1243	
June 1-15	152 – 166		1438	
June 16-30	167 – 181		1446	
July 1-15	182 – 196		1499	
July 16-31	197 – 212		1113	
August 1-15	213 – 227		401	
August 15-31	228 – 243		94	
September 1-15	244 – 258		8	
September 15-30	259 – 273		2	

1. Complete the table by filling in the mid-interval value and the cumulative frequency for each range of dates.

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Using the Normal Distribution and its Properties



The nesting days for Loggerhead sea turtles along Jupiter-Carlin beach are normally distributed with a mean (μ) of the 174th day of the year and a standard deviation (σ) of 25.9 days.

1. Calculate the probability the following will occur:

a. $P(x \leq 183)$

b. $P(141 \geq x \geq 183)$

c. $P(x = 205)$

2. Find the day of the year when the probability of a Loggerhead nesting is 45%.

The length of Loggerhead sea turtle shells are normally distributed and 20% of the sea turtles along the coast have a shell length less than 85 *cm* and 10% greater than 103 *cm*.

3. Sketch a diagram of the normal curve with the above information clearly labelled.

4. Using z-scores, find the mean and standard deviation for the length of the sea turtle shells along this coastline.