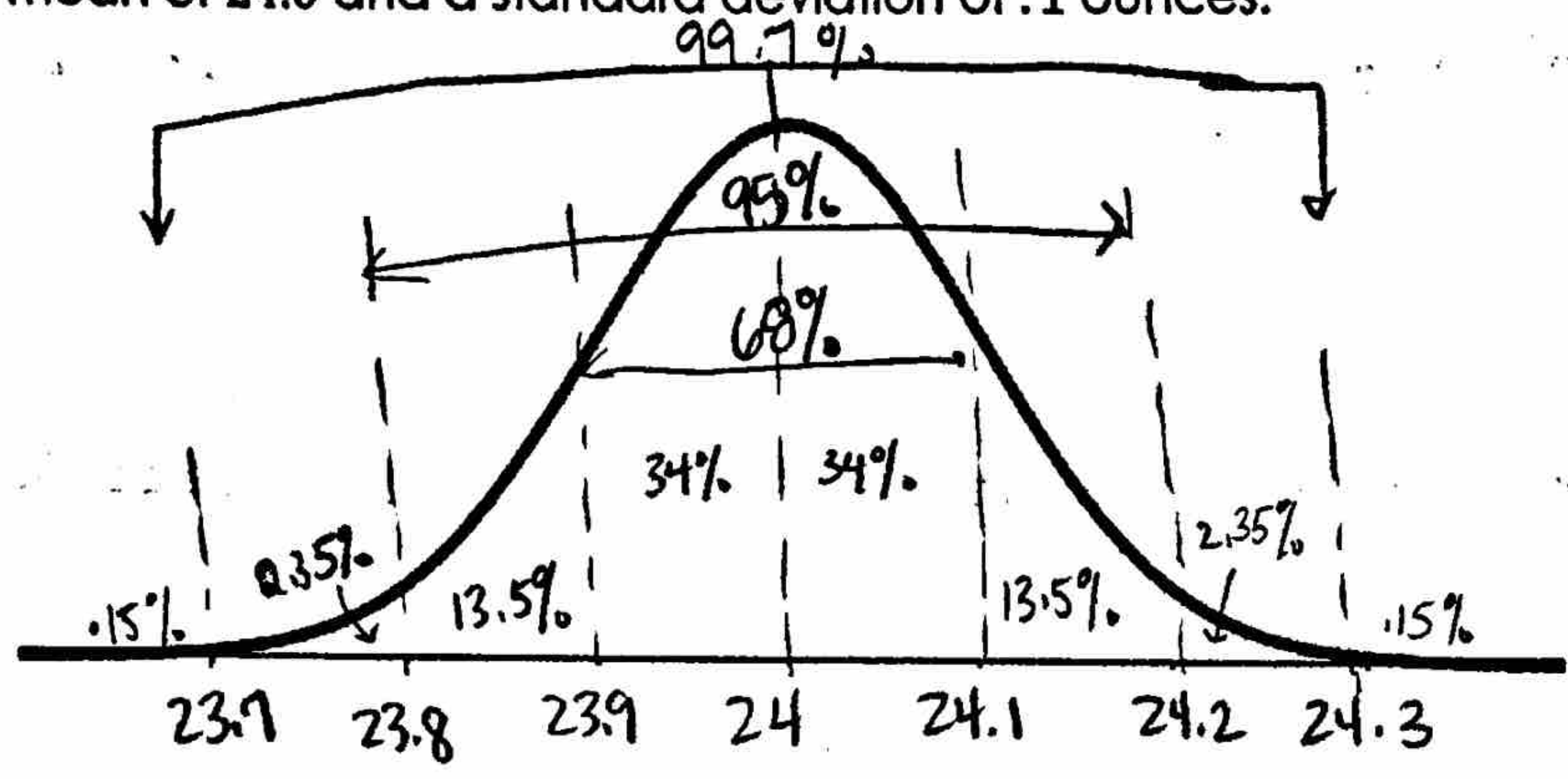


Name Key Date _____

One Variable Statistics
The Empirical Rule
Independent Practice

1. Kellogg's in Kalamazoo, Michigan has a machine that fills the Fruit Loop cereal boxes with cereal. It dispenses cereal with a normal distribution and has a mean of 24.0 and a standard deviation of .1 ounces.



Part A: The middle 95% of cereal boxes contain between 23.8 and 24.2 ounces of cereal.

Part B: Approximately 68% of cereal boxes have between 23.9 and 24.1 ounces of cereal.

Part C: What percentage of cereal boxes contain more than 24.2 ounces of cereal?
2.5%

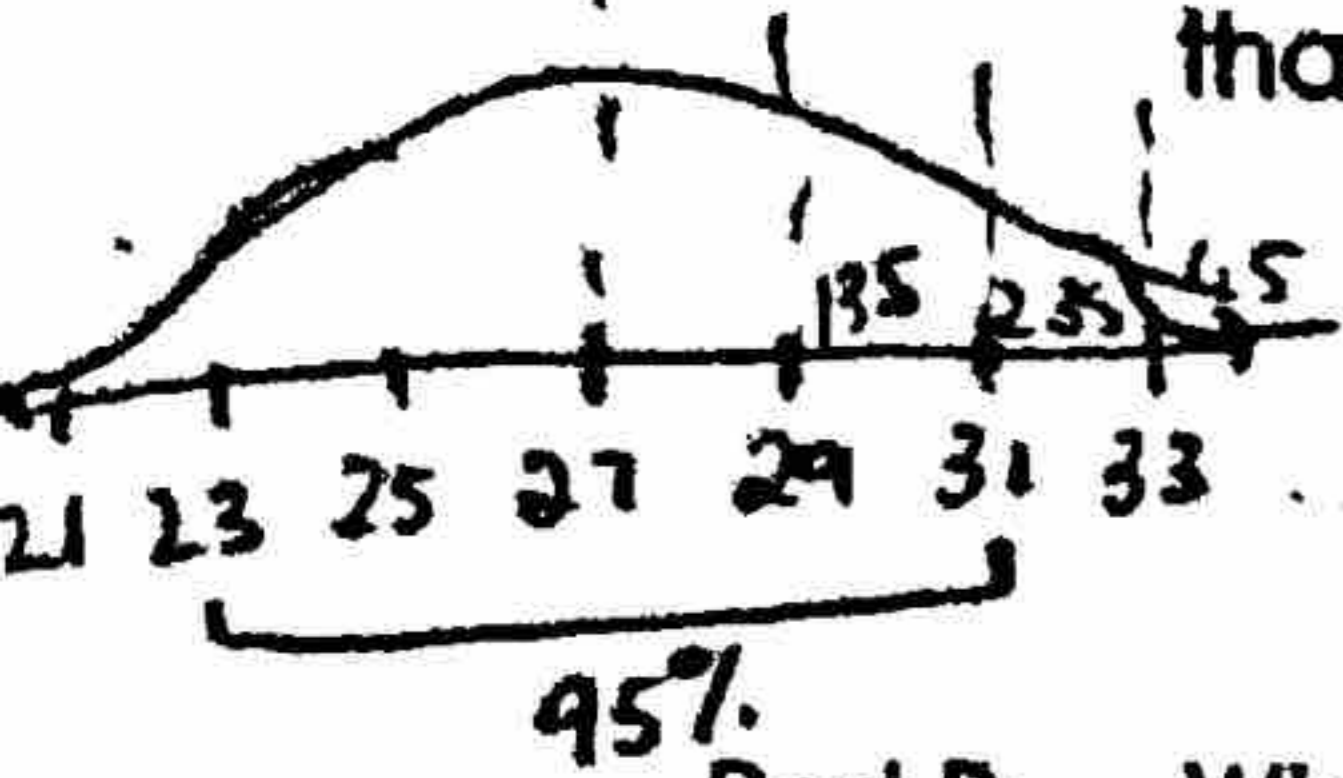
Part D: What is the probability that a randomly selected bottle of cereal contains less than 24.1 ounces of cereal?

$$\frac{84\%}{100\%} = \textcircled{.84}$$



2. ACT mathematics score for a particular year are normally distributed with a mean of 27 and a standard deviation of 2 points.

Part A: What is the probability that a randomly selected score is greater than 29 points?



$$\frac{16\%}{100\%} = .16$$

Part B: What percentage of students scores are between 31 and 23?

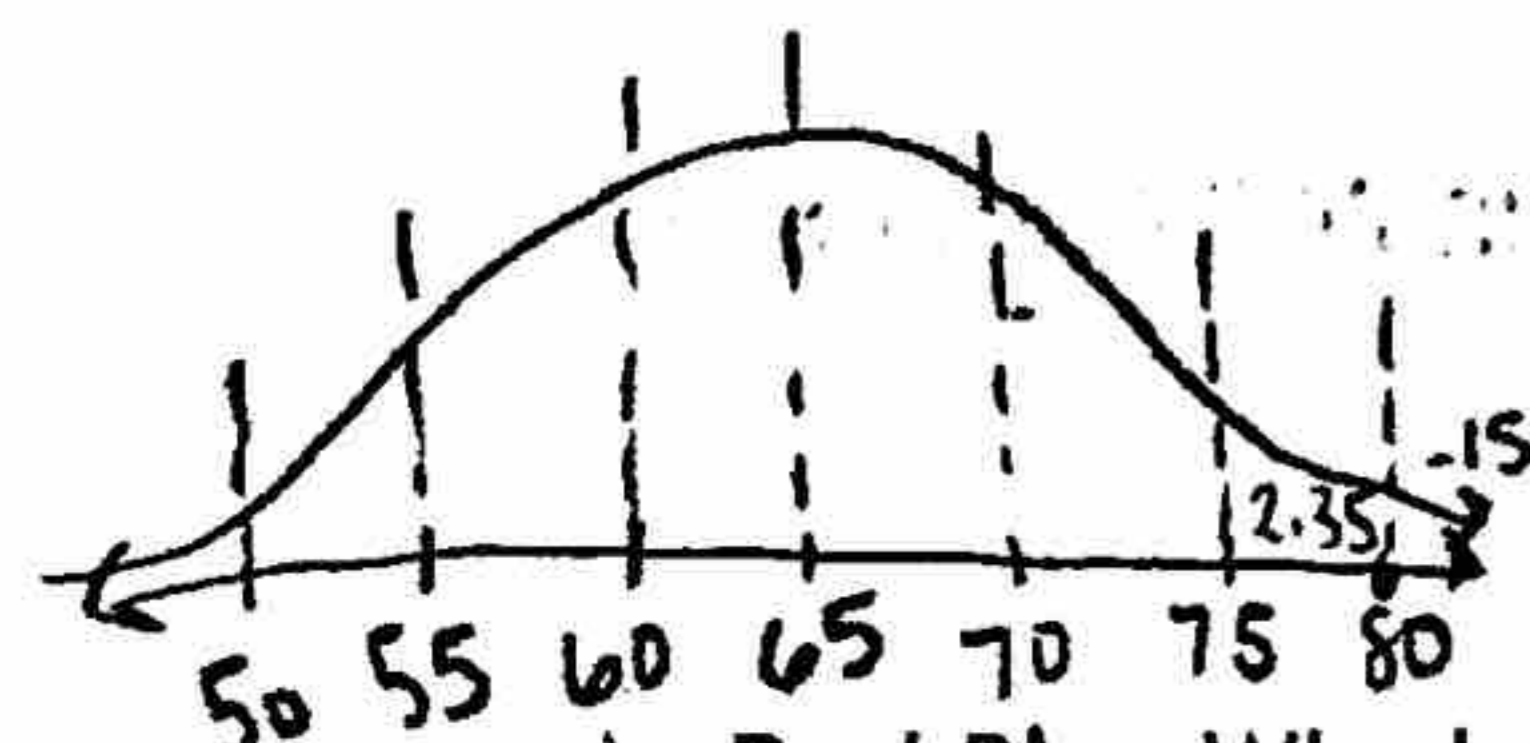
95%

Part C: A student who scores a 31 is in the 97.5th percentile.

$$100 - 2.5 = 97.5$$

3. Mr. Barnett's test is normally distributed with a mean of 65 and a standard deviation of 5 points.

Part A: What is the probability that a randomly selected score is greater than 75 points?



$$\frac{2.5\%}{100\%}$$

$$= 0.025$$

Part B: What percentage of students scores are between 60 and 70?

68%

Part C: A student who scores a 80 is in the 99.85th percentile.

$$100 - .15 = 99.85$$