

READY, SET, GO!

Name

Period

Date

**READY**

Topic: Working with standard deviation and percentiles

1. Jordan scores a 53 on his math test. The class average is 57 with a standard deviation of 2 points. How many standard deviations below the mean did Jordan score?
2. In Jordan's science class, he scored a 114. The class average was a 126 with a standard deviation of 6 points. How many standard deviations below the mean did Jordan score? In comparison to his peers, which test did Jordan perform better on?
3. Rank the data sets below in order of greatest standard deviation to smallest:

$$A = \{1,2,3,4\} \quad B = \{2,2,2,2\} \quad C = \{2,4,6,8\} \quad D = \{4,5,6,7\} \quad E = \{1,1.5,2,2.5\}$$

4. Robin made it to the swimming finals for her state championship meet. The times in the finals were as follows:

$$\{2:10.3, \quad 2:12.5, \quad 2:12.7, \quad 2:12.38, \quad 2:20.45, \quad 2:21.43\}$$

If Robin's time was a 2:12.7, what percent of her competitors did she beat?

5. Remember that in statistics,  $\mu$  is the symbol for mean and  $\sigma$  is the symbol for standard deviation. Using technology, identify the mean and standard deviation for the data set below:

$$\{1.23, \quad 1.3, \quad 1.1, \quad 1.48, \quad 1, \quad 1.14, \quad 5.21, \quad 5.1, \quad 4.63\}$$

$$\mu = \quad \sigma =$$

6. For the data in number 5, what time would fall one standard deviation above the mean?  
Three standard deviations below the mean?

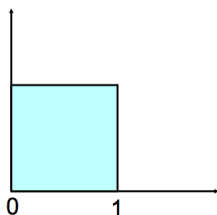
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**SET**

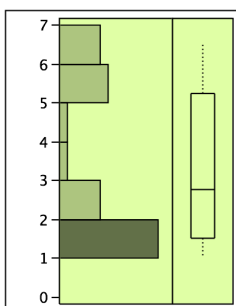
Topic: Identifying properties of the normal curve

**For each distribution, identify the properties that match with a Normal Distribution, and then decide if the Normal curve could be used as a model for the distribution and explain why.**

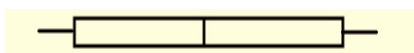
7. Normal Properties: Model with a Normal Curve? Yes or No



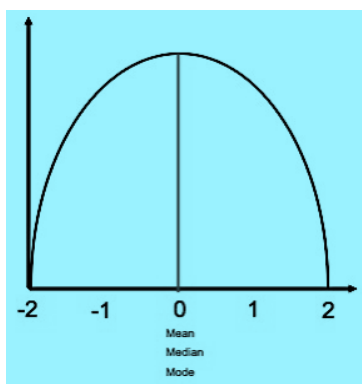
8. Normal Properties: Model with a Normal Curve? Yes or No



9. Normal Properties: Model with a Normal Curve? Yes or No



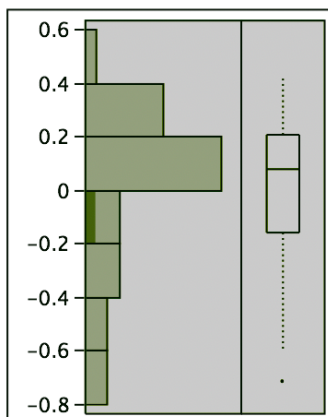
10. Normal Properties: Model with a Normal Curve? Yes or No



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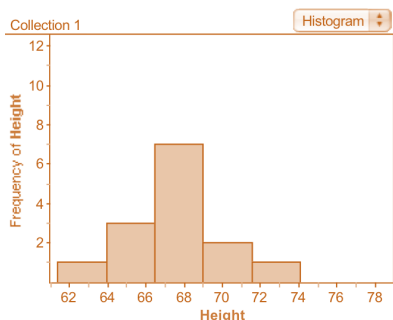
11.

Normal Properties:      Model with a Normal Curve? Yes or No



Mean = 0    Median = 0.1    Mode = 0.1

Normal Properties:      Model with a Normal Curve? Yes or No



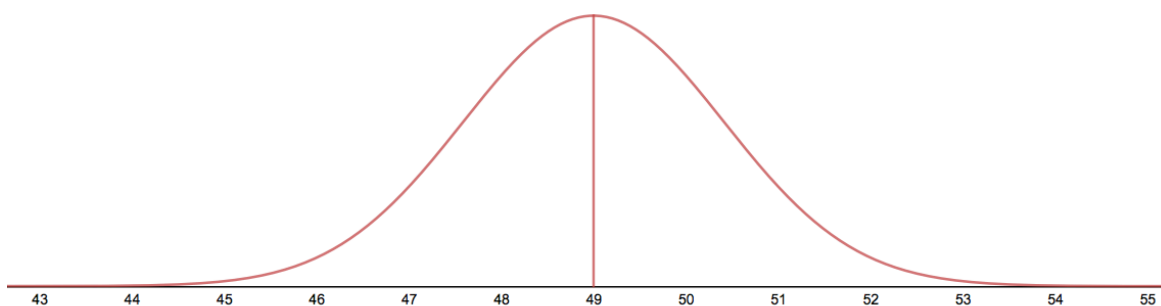
**Mean: 68    Median: 68    Mode: 68**

13. If two Normal distributions have the same standard deviation of 4.9 but different means of 3 and 6, how will the two Normal curves look in relation to each other? Draw a sketch of each Normal curve below.

14. If two Normal distributions have the same mean of 3 but standard deviations of 1 and 4, how will they look in relation to each other? Draw a sketch of each Normal curve below.

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15. The Normal Curve given below has been labeled out three standard deviations. Estimate what one standard deviation is for this curve.



**GO**

Topic: Recalling inverses

**Write the inverse of the given function in the same format as the given function:**

16.  $f(x) = 3x^2 + 2$       17.  $g(x) = \frac{2x-7}{4}$       18.  $h(x) = 3 + \sqrt{2x-1}$       19.

x	y
12	24
14	38
-7	4
13	6
7	0

**Determine if the following functions are inverses by finding  $f(g(x))$  and  $g(f(x))$ .**

20.  $f(x) = 2x + 3$  and  $g(x) = \frac{1}{2}x - \frac{3}{2}$

21.  $f(x) = 2x^2 - 3$  and  $g(x) = \sqrt{\frac{x^2}{2}} + 3$

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