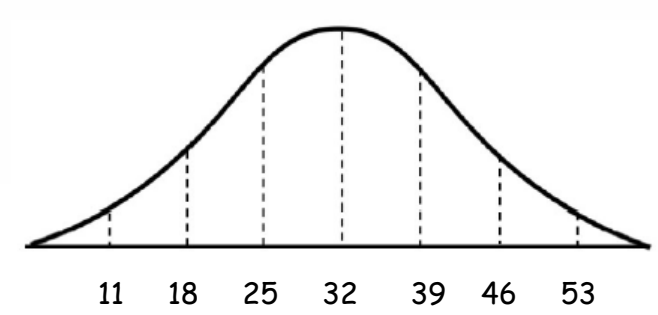
GSE Algebra II | Unit 6 – Quiz Review | Normal Distribution & Z-scores

Name _____ Date _____

1. Use the normal curve to find the following:



a. mean _____

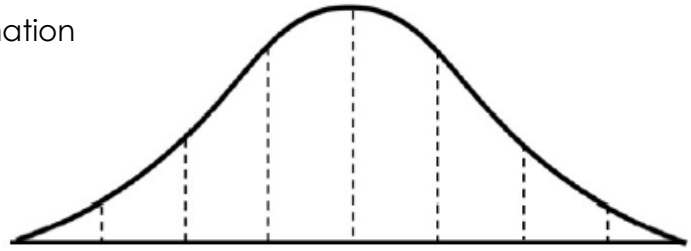
b. standard deviation _____

c. Between what 2 data values does the middle 95% of the data fall?

_____

2. A machine is used to put bolts into 1000 boxes. It does so such that the actual number of bolts in a box is normally distributed with a mean of 106 and a standard deviation of 2.

a. Draw & label the normal curve for the information



b. What percentage of boxes contain more than 104 bolts? _____

c. What percentage of boxes contain less than 102 bolts? _____

d. Approximately how many boxes have between 104 and 110 bolts? _____

e. Approximately how many boxes have no more than 108 bolts? _____

3. The number of participants in a XC race is normally distributed throughout the season. If the mean number of runners is 87 with a standard deviation of 8. If the z-score for the region meet is -2.75, how many people raced in the region meet?

4. If the daily temperature in Marietta in May has a standard deviation on 2.1 degrees. If May 18th had a high of 75 degrees and a z-score of 1.7, what is the mean high temperature?

5. The ACT scores are normally distributed with a mean of 18 and a standard deviation of 6. If Jill has a z-score of 2.1 and Jack has a z-score of 1.7, how many points higher is Jill's ACT score compared to Jack's?

6. You have a set of data. The mean of the data is 32 with a standard deviation of 3.2. Find the following probabilities:

a. _____ $P(z \geq -1.25)$

b. _____ $P(X \leq 24)$

c. _____ P(X is at most 36)

d. _____ $P(z \leq -2.5)$

e. _____ $P(24 \leq X \leq 40)$

f. _____ If there are 20 data values, approximately how many will be more than 33?

7. The scores on the midterm exam are normally distributed with a mean of 72.3 and a standard deviation of 8.9. What percentage of the students in the class can be expected to receive a score between 82 and 90?

8. A group of 625 students has a mean age of 15.8 years with a standard deviation of 0.6 years. The ages are normally distributed. How many students are younger than 16.2 years?