

Content Standards:

-To describe the properties of the normal distribution.

Process Standards:

-Students will use problem solving techniques to decide how to approach a scenario.
-Students will demonstrate effective communication skills when presenting information in written form.

Task:

You have learned how to do two types of problems relating to the Normal Distribution. The first is calculating probabilities using z-scores; the second is converting percentages back into statistics. These problems can be done using one of the sets of steps below.

Steps for Calculating Probabilities using Z-scores:

1. Write a probability statement in terms of X .
2. Ask yourself...is the z-score provided? If yes, continue to step #3. If no, convert X into a z-score.
3. Rewrite the probability statement in terms of z .
4. Draw the standard normal curve, plot the value(s) of z , shade the desired region.
5. Use the table to determine the shaded area.
6. Answer the question in context.

Converting Percentages Back into Statistics:

1. Draw the Standard Normal Distribution and place the given percentage in the curve in the appropriate location.
2. Using the table, determine the z-score that corresponds to the area from 0 to the boundary line.
3. Replace the z-score value, the mean, and the standard deviation into the z-score formula to solve for X .
4. Write your answer in context.

How do you know when to use the first set of steps versus the second set of steps? Use the properties of the Normal Distribution in your answer. Explain problem solving techniques you use as you approach a question.