

Name: _____

Date: _____

Remember the formula for a z-score:

What is a z-score?

Table of z-scores:

1. If $z = 1.5$ What is the area below z ? above z ?
2. If $z = -1.26$ What is the area below z ?
3. What is the area between $z = -1.3$ and $z = 2.5$?
4. If the area to the left of z is 0.9474, what is the z-score?
5. If the area to the right of z is 0.9731, what is the z-score?
6. If 20% of widgets are defective and 1000 widgets are produced, how many widgets were defective?

Example Fred finds out that best before dates on milk are based on the number of days before spoilage. He finds out that milk is good for an average of 12 weeks with a standard deviation of 1.5 weeks. He wants to find out what percentage of milk is spoiled after 10 weeks.

a. What z-score corresponds to 10 weeks?

b. What proportion of the area under a standard normal curve is below this z-score?

Example The GPA at Charles Xavier Academy has a mean of 2.8 with a standard deviation of 0.4. The top 10% of these students are accepted to go to University. What is the minimum GPA that these students have?

Example At the annual spaghetti harvest, the spaghetti has an average length of 80cm with a standard deviation of 12cm. Spaghetti that is shorter than 60cm is rejected as being too short. What percentage of the spaghetti is rejected?

Example Apple is planning on marketing the iShoe. Their preliminary studies show that they last for an average of 8.5 months with a standard deviation of 1.1 months. They want to offer a money back guarantee for iShoes that wear out early, but only actually want to give the money back to less than 2% of all iShoe owners.

- a. How long should they warrantee their shoes for?

- b. When the iShoe is released, Apple sells 50000 pairs. How many do they expect to be turned in after 5 months?

Example At Central, the average Foundations of Math 11 grade is 71% with a standard deviation of 12%. If 24 students have a B, how many students are taking Foundations of Math 11?