Ma321 Quiz 4 Review

For problems 1-9 below, draw the graphs for the problem. Label each as one of these types as well:

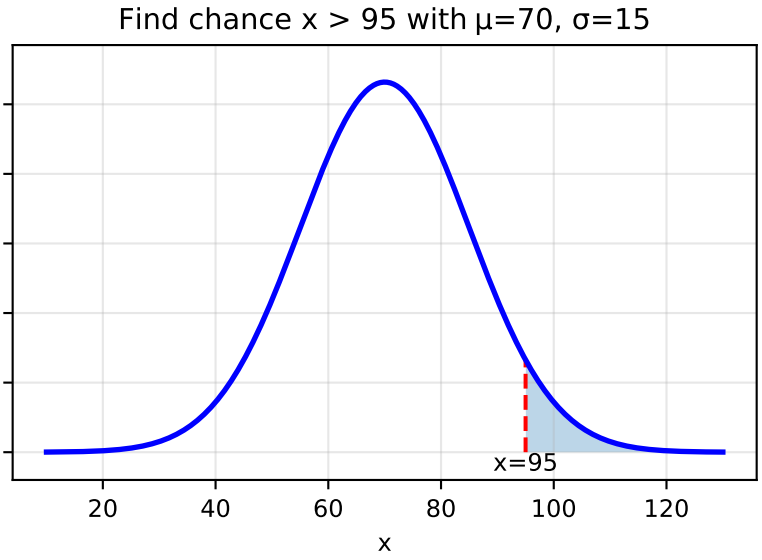
- Left Tail Area x-distribution
- Left Tail Area z-distribution
- Right Tail Area x-distribution
- Right Tail Area z -distribution
- Backwards Right Tail Area
- Backwards Left Tail Area

Questions

1. For a normal distribution with mean 70 and standard deviation 15, what is the chance that x is greater than 95?

Solution

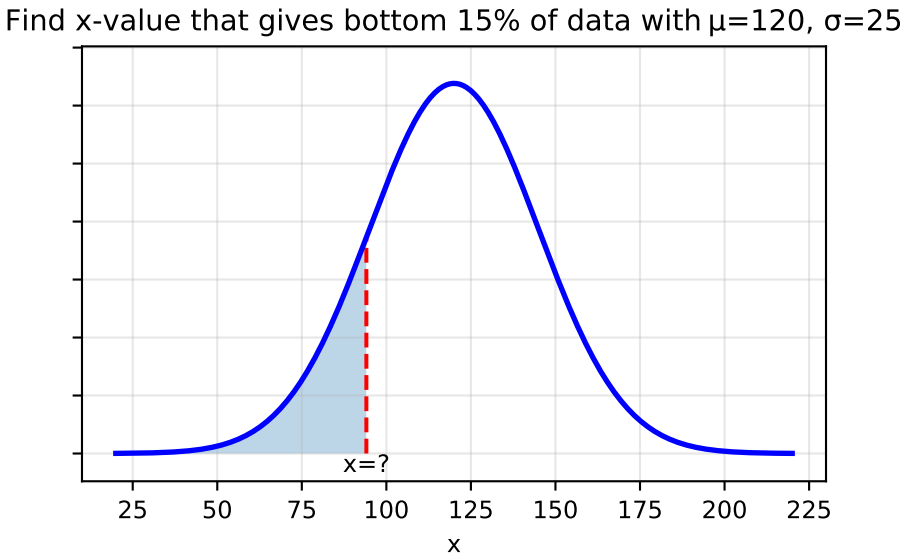
Right Tail Area x-distribution



2. With a mean of 120 and standard deviation of 25, what value marks the bottom 15% of the data?

Solution

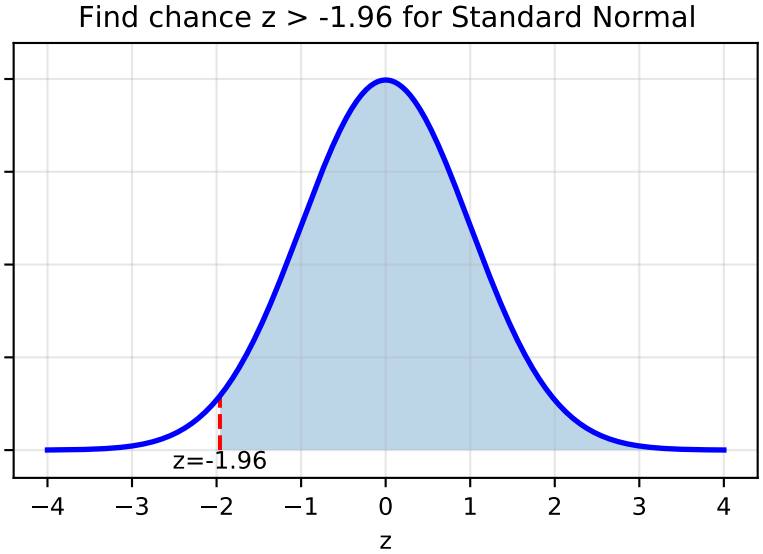
Backwards Left Tail Area



3. For a standard normal curve, find the chance that z > -1.96.

Solution

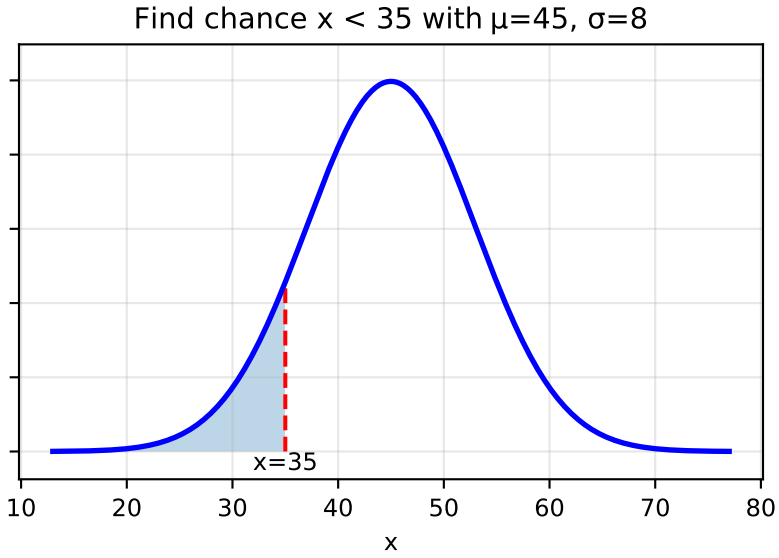
Right Tail Area z-distribution



4. For a normal distribution with mean 45 and standard deviation 8, what is the chance that a value falls below 35?

Solution

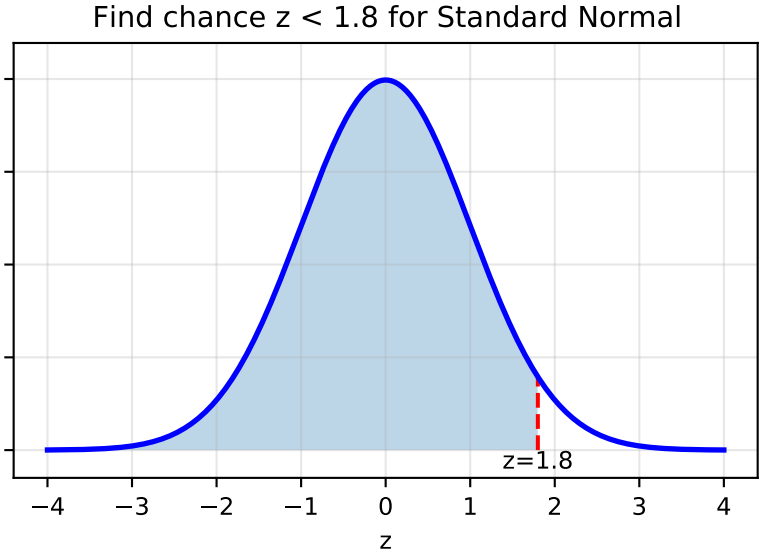
Left Tail Area x-distribution



5. For a standard normal distribution, find chance that z < 1.8

Solution

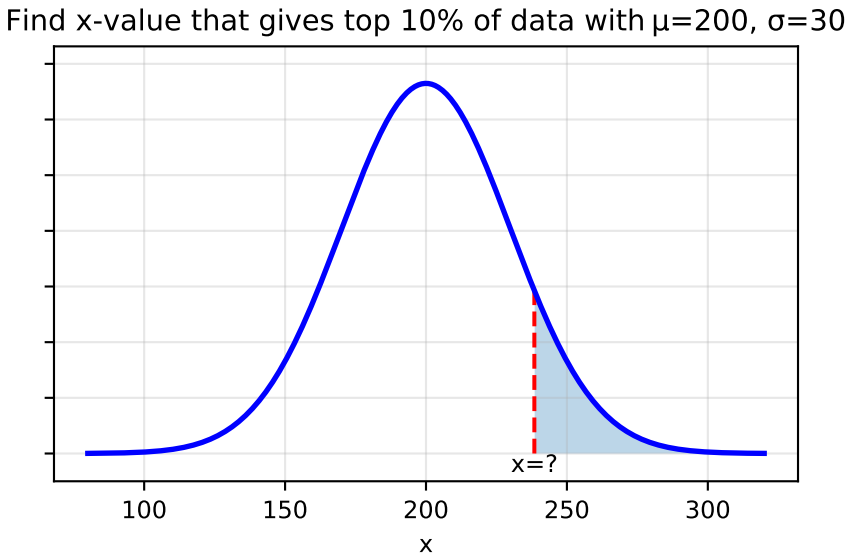
Left Tail Area z-distribution



6. In a normal distribution with mean 200 and standard deviation of 30, what value marks the top 10% of the data?

Solution

Backwards Right Tail Area

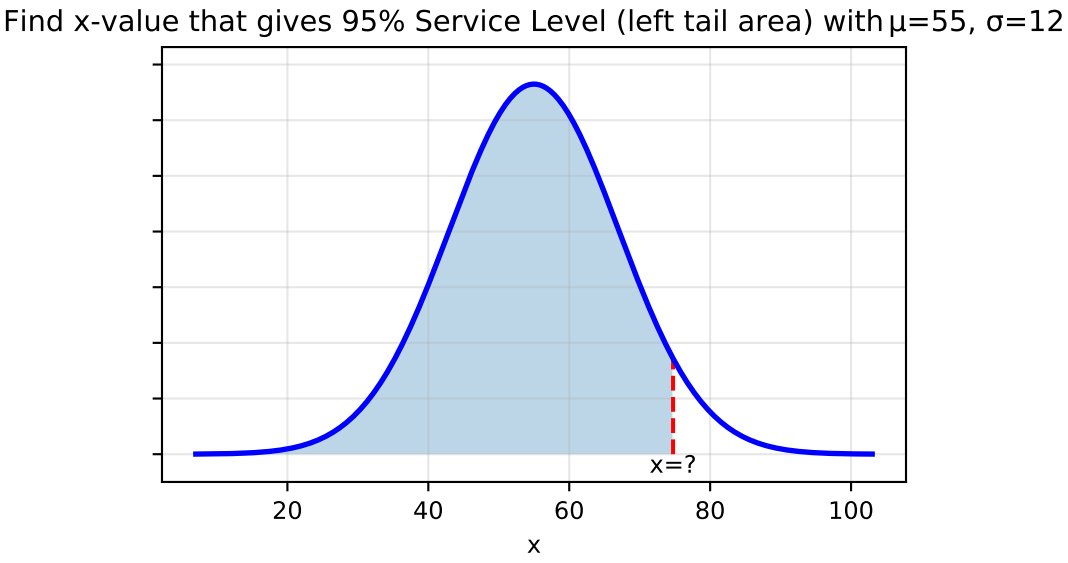


For problems 7, 8, and 9 below, consider a product with monthly demand that follows a normal distribution with mean 55 units and standard deviation 12 units. You can restock the item at the beginning of the month but you cannot order more till the next month.

7. If you need to have a 95% service level what level should you restock to at the beginning of the month?

Solution

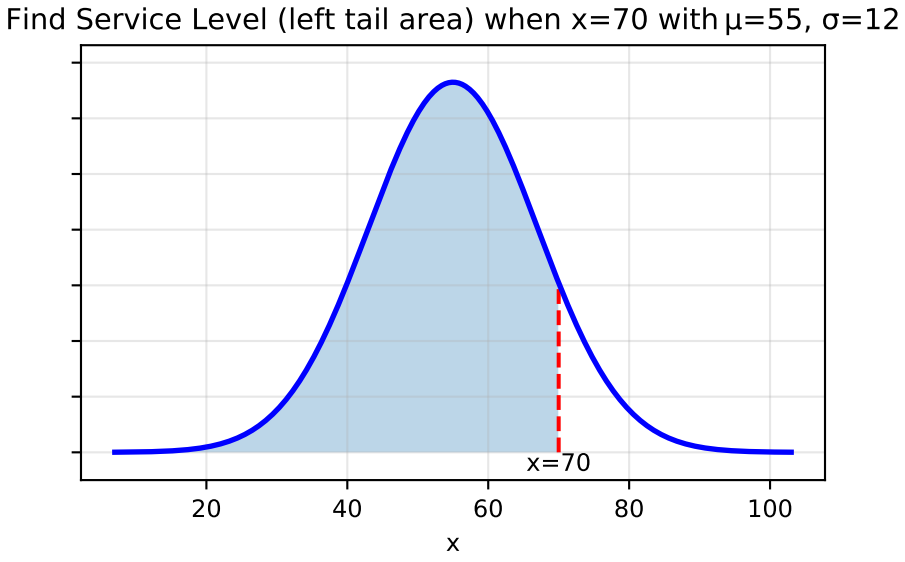
Backwards Left Tail Area



8. If you need to stock to 70 at the beginning of the month, what would be the service level?

Solution

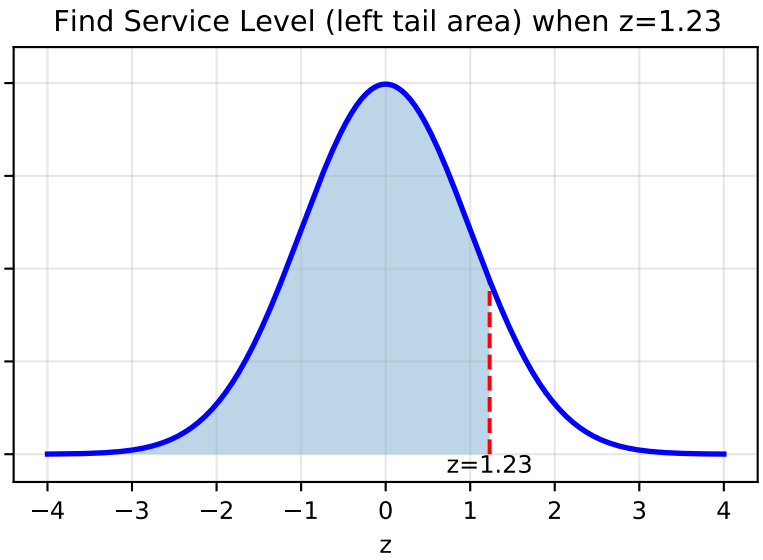
Left Tail Area x-distribution



9. If you have a service factor of z=1.23, what service level does this provide?

Solution

Left Tail Area z-distribution


Find Service Level (left tail area) when z=1.23
z=1.23
−4
−3
−2
−1
0
1
2
3
4
z