

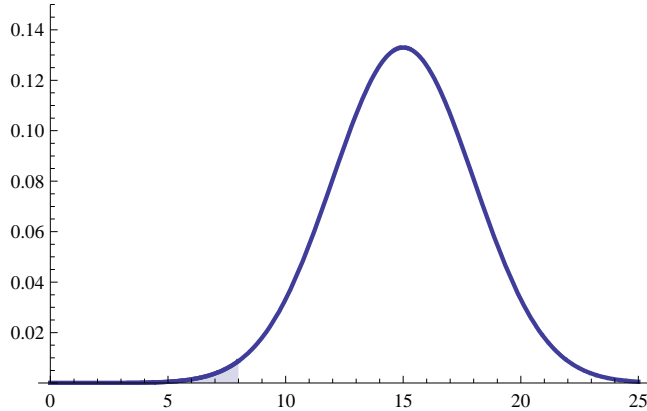
Homework Solutions

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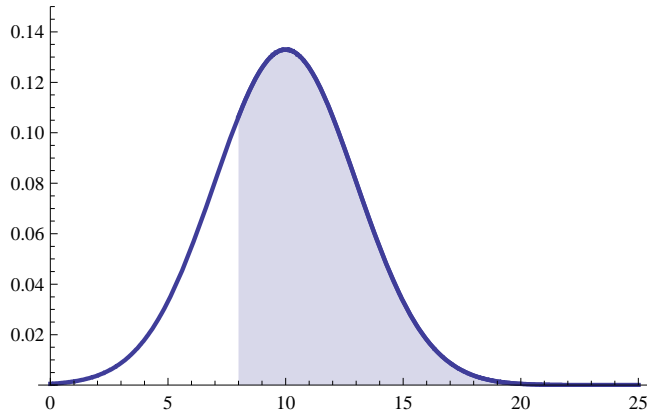
Exercise 27

We have the following two distributions for H_0 and H_1 :

H_0 :



H_1 :



- (a) The direction of extreme is to the left, so for α , use the H_0 graph and find the area to the left of 8. That is given by $\text{normalcdf}(-E99, 8, 15, 3) = 0.0098$. So, $\alpha = 0.0098$. (The answer is shaded in the H_0 graph above, but it is barely noticeable.)
- (b) For β , use the H_1 graph and find the area to the *right* of 8. That is $\text{normalcdf}(8, E99, 10, 3) = 0.7475$. So, $\beta = 0.7475$. (The answer is shaded in the H_1 graph above.)
- (c) The p -value is calculated in the same way as α , except use 8.5 instead of 8. So the p -value is $\text{normalcdf}(-E99, 8.5, 15, 3) = 0.151$.