Chapter 14 / **Example 13**
Calculating with the inverse normal function

Given that $Z \sim \mathrm{N}(0,1)$, use your GDC to find a when:

a $\mathrm{P}(Z < a) = 0.877$ **b** $\mathrm{P}(Z > a) = 0.2$

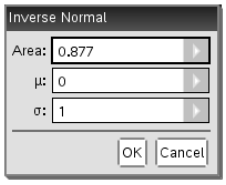
c $\mathrm{P}(Z > a) = 0.55$ **d** $\mathrm{P}(-a < Z < a) = 0.42$

Open a new document and add a Calculator page.

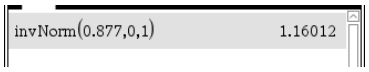
Press menu 5:Probability | 5:Distributions | 3:Inverse Normal...

Enter the Area 0.877

Press enter.



$a = 1.16$

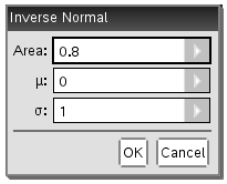


If $\mathrm{P}(Z > a) = 0.2$ then $\mathrm{P}(Z < a) = 1 - 0.2 = 0.8$

Press menu 5:Probability | 5:Distributions | 3:Inverse Normal...

Enter the Area 0.8

Press enter.



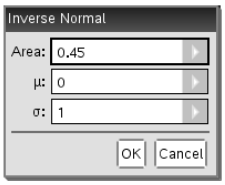
$a = 0.842$

If $\mathrm{P}(Z > a) = 0.55$ then $\mathrm{P}(Z < a) = 1 - 0.55 = 0.45$

Press menu 5:Probability | 5:Distributions | 3:Inverse Normal...

Enter the Area 0.45

Press enter.



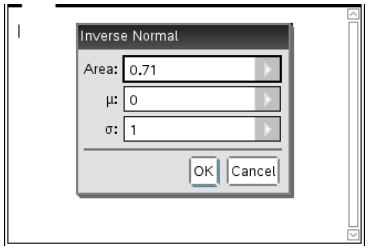
$a = -0.126$

If $\mathrm{P}(-a < Z < a) = 0.42$ then $\mathrm{P}(Z < a) = 1 - \frac{1}{2}(1 - 0.42) = 0.71$

Press menu 5:Probability | 5:Distributions | 3:Inverse Normal...

Enter the Area 0.71

Press enter.



$a = 0.553$