

Chapter 14 / Example 13

Calculating with the inverse normal function

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

- a** $P(Z < a) = 0.877$ **b** $P(Z > a) = 0.2$
c $P(Z > a) = 0.55$ **d** $P(-a < Z < a) = 0.42$

Press **MENU** 2 **STAT** to display the List Editor screen.

Press **F5** DIST **F1** NORM **F3** InvN

Select Data **F2** Var and Select Tail **F1** LEFT

Enter the Area 0.877 and leave the other variables unchanged.

Use **▼** to navigate down to Execute and press **EXE**.

```

Inverse Normal
Data :Variable
Tail :Left
Area :0.877
σ :1
μ :0
Save Res:None
List Var
  
```

$a = 1.16$

```

Inverse Normal
xInv=1.16011988
  
```

Press **EXIT**

Select Data **F2** Var and Select Tail **F2** RIGHT

Enter the Area 0.2 and leave the other variables unchanged.

Use **▼** to navigate down to Execute and press **EXE**.

```

Inverse Normal
Data :Variable
Tail :Right
Area :0.2
σ :1
μ :0
Save Res:None
List Var
  
```

$a = 0.842$

```

Inverse Normal
xInv=0.84162123
  
```

Press **EXIT**

Select Data **F2** Var and Select Tail **F2** RIGHT

Enter the Area 0.55 and leave the other variables unchanged.

Use **▼** to navigate down to Execute and press **EXE**.

```

Inverse Normal
Tail :Right
Area :0.55
σ :1
μ :0
Save Res:None
Execute
CALC
  
```

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| | |
|---|--|
| $a = -0.126$ | <div style="border: 1px solid black; padding: 5px;"> Inverse Normal xInv=-0.1256613 </div> |
| <p>Press EXIT</p> <p>Select Data F2 Var and Select Tail F3 CENTRAL</p> <p>Enter the Area 0.42 and leave the other variables unchanged.</p> <p>Use ▼ to navigate down to Execute and press EXE.</p> | <div style="border: 1px solid black; padding: 5px;"> Inverse Normal Data :Variable Tail :Central Area :0.42 σ :1 μ :0 Save Res:None List Var </div> |
| $a = 0.553$ | <div style="border: 1px solid black; padding: 5px;"> Inverse Normal x1 Inv=-0.5533847 x2 Inv=0.55338472 </div> |