Problem 1

mean = 185 SD =15

P(x ≤207) =_____

This means SHADE LEFT of 207

P(x ≤207) ≈0.9292

P(z ≤1.47) =_____

This means SHADE LEFT of 1.47

P(z ≤1.47) ≈0.9292

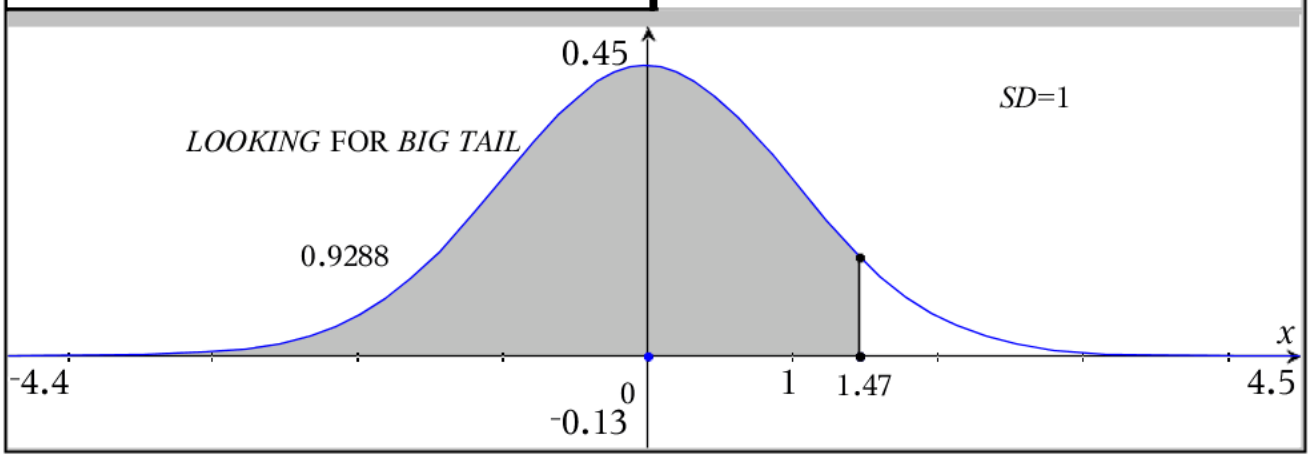
$Z = \frac{x-185}{15}$

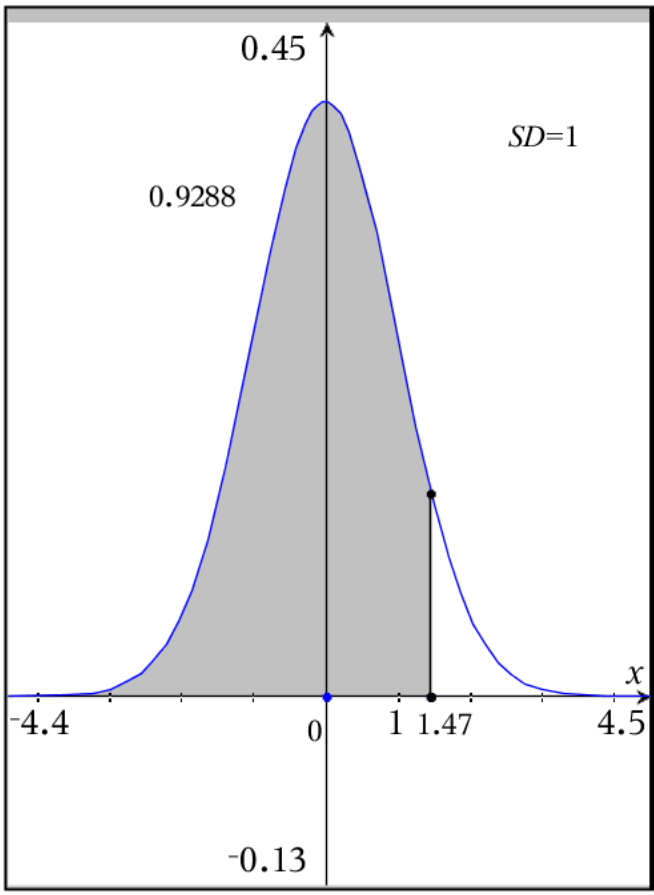
$Z = \frac{207-185}{15.} = 1.47$

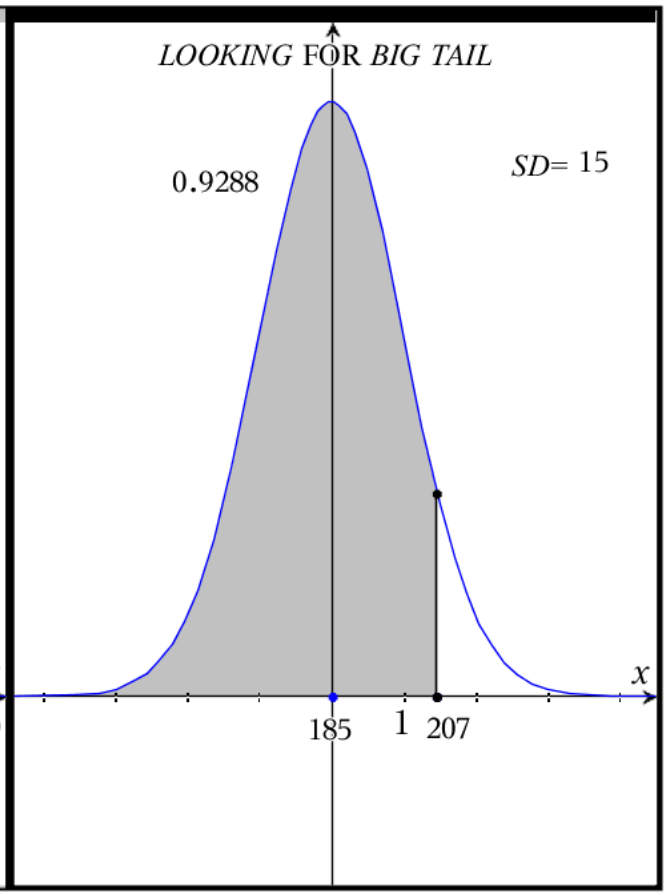
This Z score leads to a BIG TAIL of 0.9292

This Z score leads to a SMALL TAIL of

1−0.9292 =0.0708







Problem 2

mean = 192 SD =75

P(x ≥118) =0.8389

This means SHADE RIGHT of x=118

P(Z ≥-0.99) =0.8389

This means SHADE RIGHT of z=-0.99

$Z = \frac{x-192}{75}$

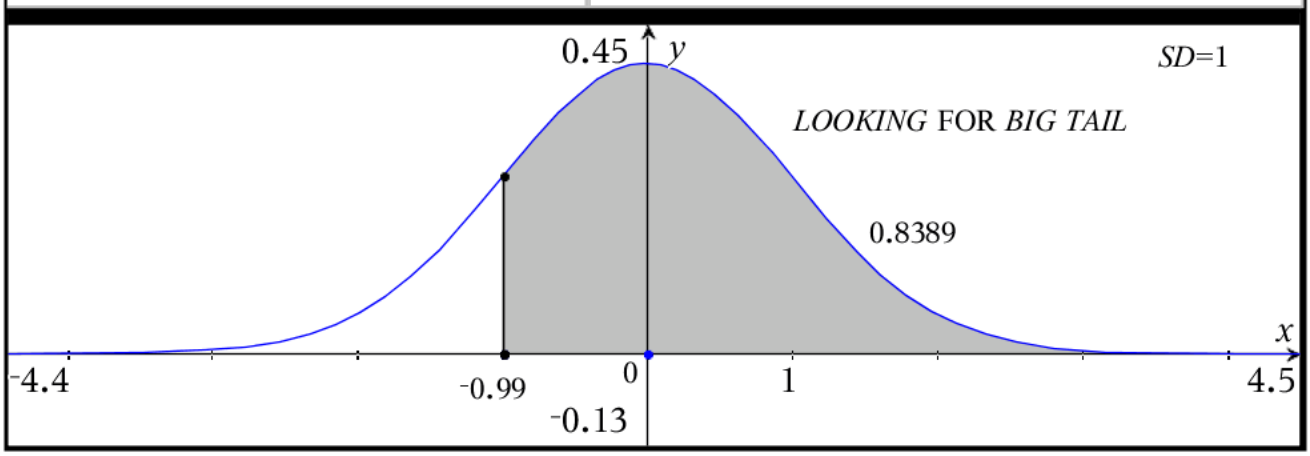
$Z = \frac{118-192}{75.} \approx -0.99$

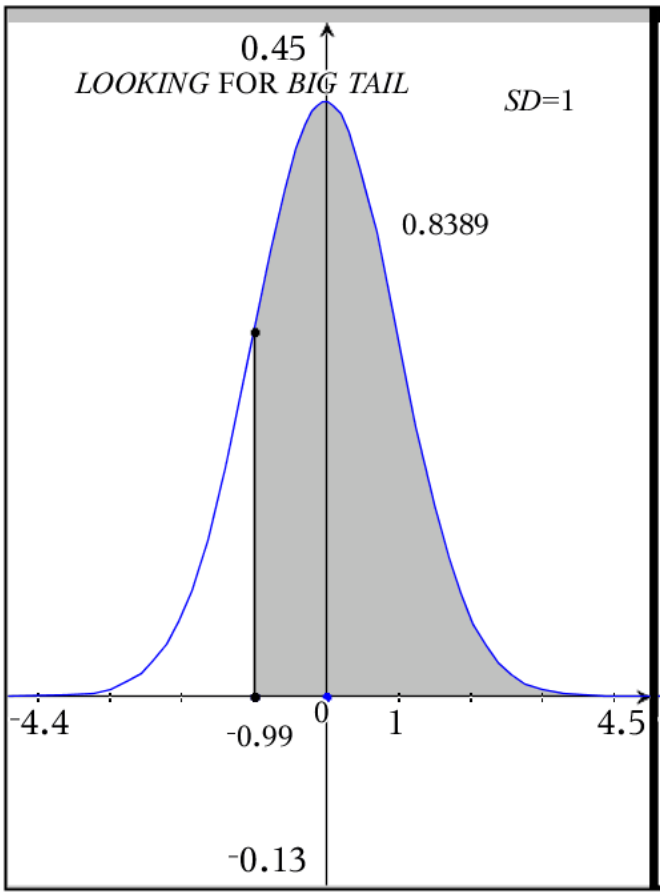
This Z score leads to a BIG TAIL of 0.8389

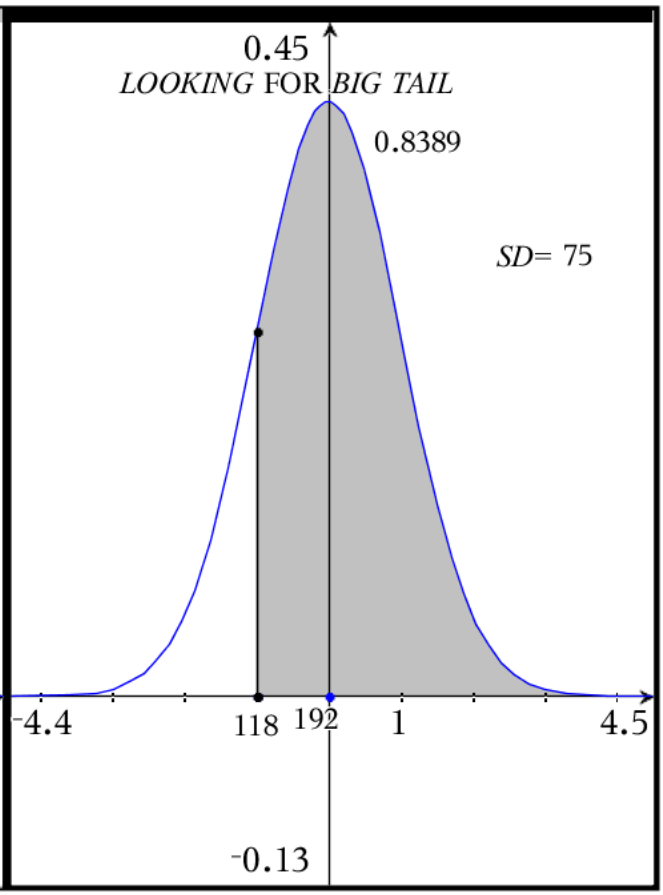
This Z score leads to a SMALL TAIL of

$1-0.8389$

$= 0.1611$







Problem 3

mean = 180 SD =75

P(x ≤118) =_____

This means SHADE LEFT of 118

P(x ≤118) ≈0.2033

P(z ≤-0.83) =_____

This means SHADE LEFT of -0.83

P(z ≤-0.83) ≈0.2033

$Z = \frac{x-180}{75}$

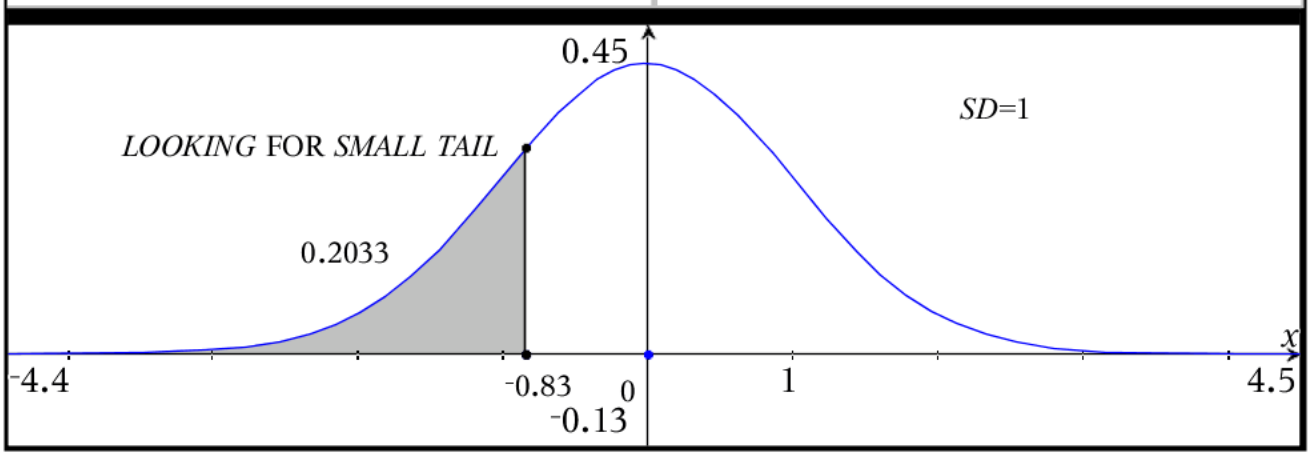
$Z = \frac{118-180}{75.} = -0.83$

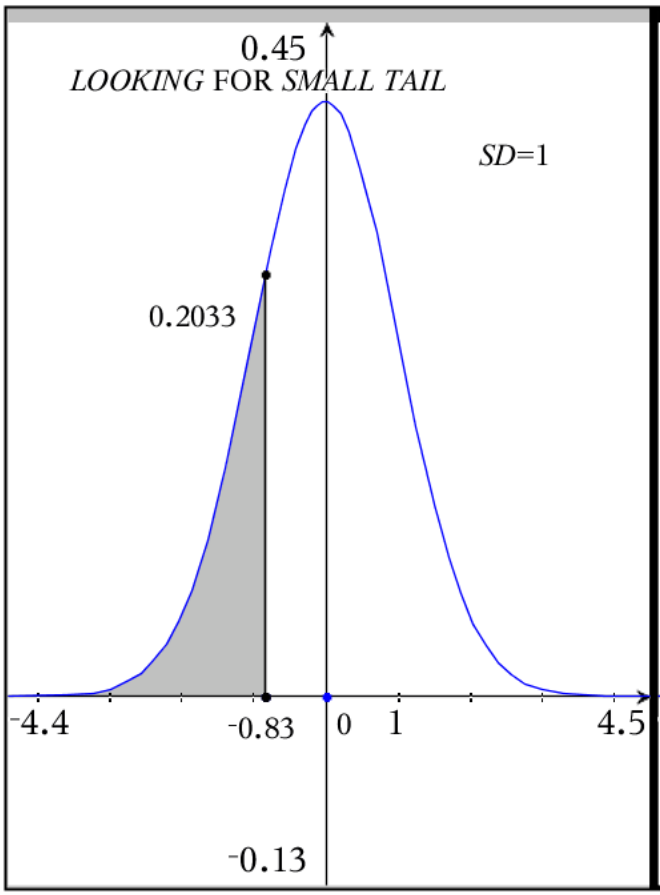
This Z score leads to a BIG TAIL of 0.7967

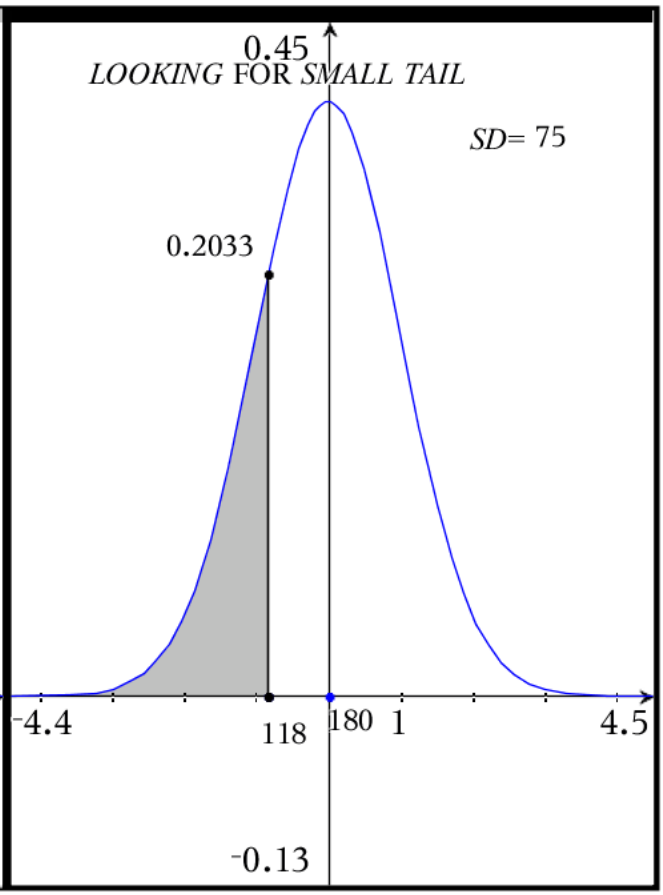
This Z score leads to a SMALL TAIL of

$1-0.7967$

$= 0.2033$







Problem 4

mean = 200 SD =90

P(x ≤195) =_____

This means SHADE LEFT of 195

P(x ≤195) ≈0.3897

P(z ≤-0.28) =_____

This means SHADE LEFT of -0.28

P(z ≤-0.28) ≈0.3897

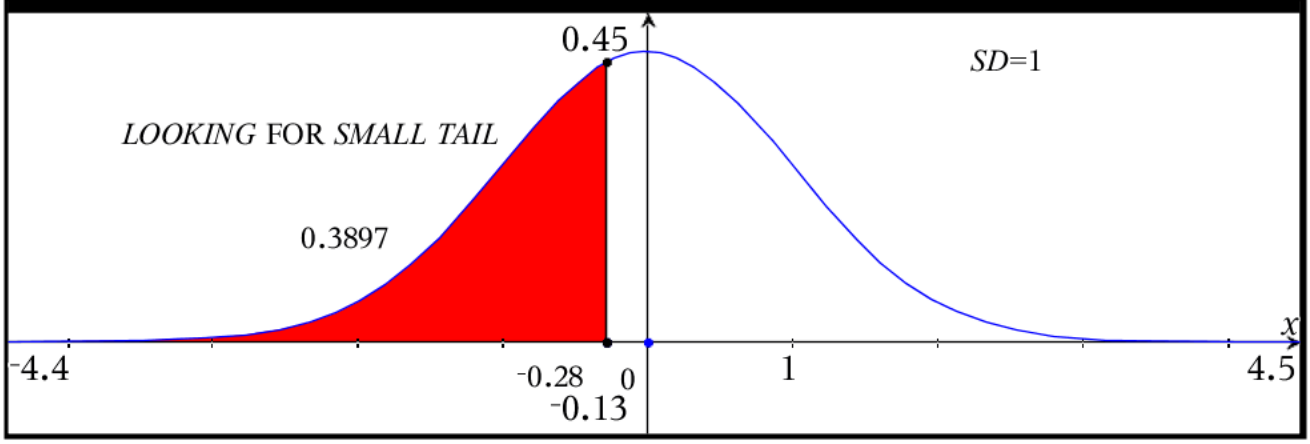
$Z = \frac{x-200}{90}$

$Z = \frac{175-190}{60.} = -0.25$

This Z score leads to a BIG TAIL of 0.6103

This Z score leads to a SMALL TAIL of

1−0.6103 =0.3897



mean = 200 SD =90

P(x ≤215) =_____

This means SHADE LEFT of 215

P(x ≤215) ≈0.5675

P(z ≤0.17) =_____

This means SHADE LEFT of 0.17

P(z ≤0.17) ≈0.5675

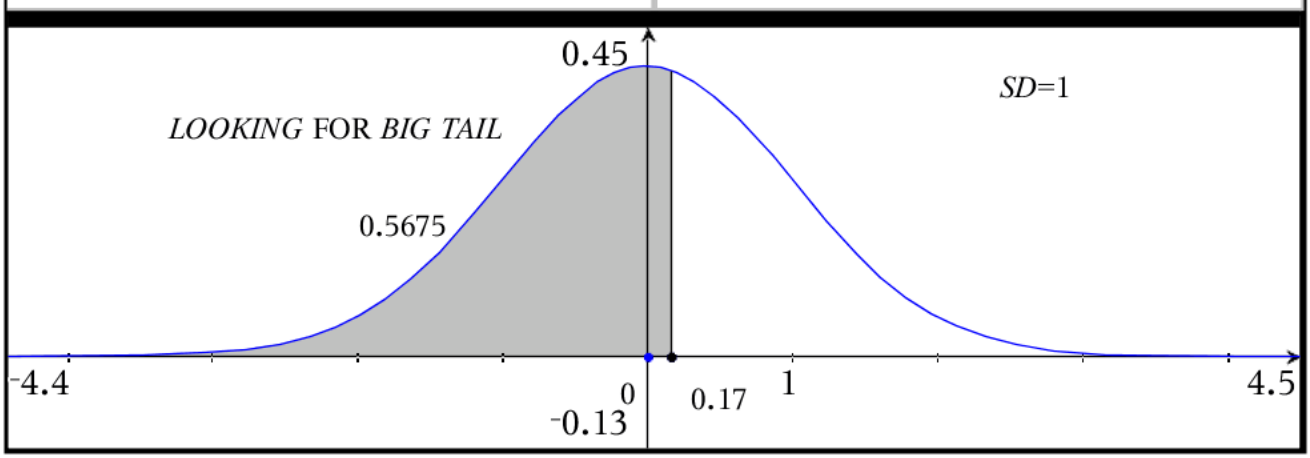
$Z = \frac{x-200}{90}$

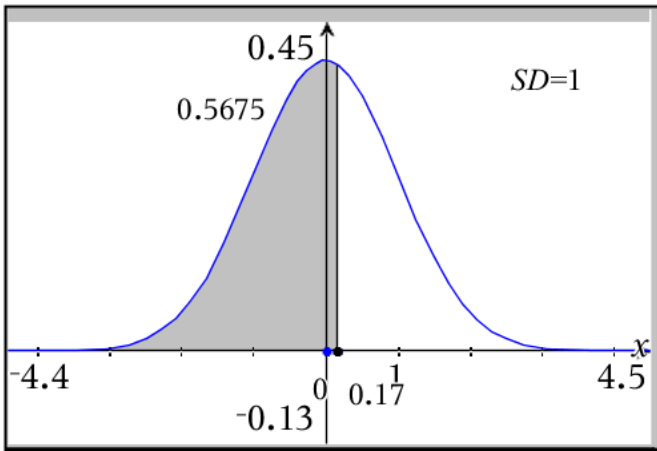
$Z = \frac{215-200}{90.} = 0.17$

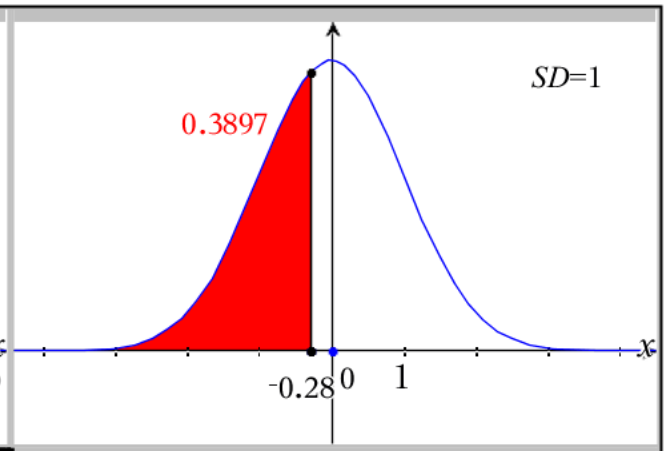
This Z score leads to a BIG TAIL of 0.5675

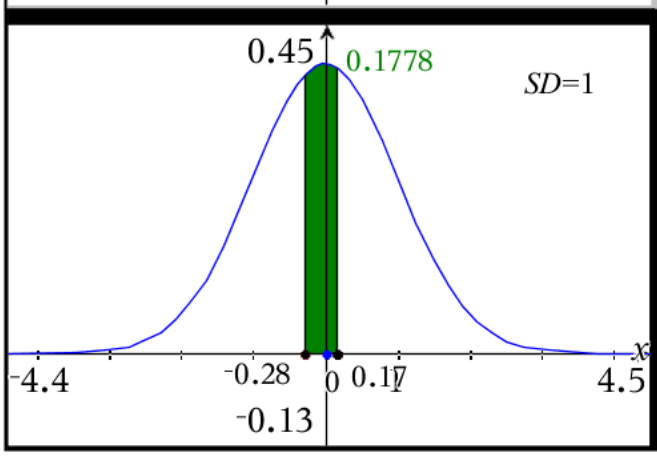
This Z score leads to a SMALL TAIL of

1−0.5675 =0.4325







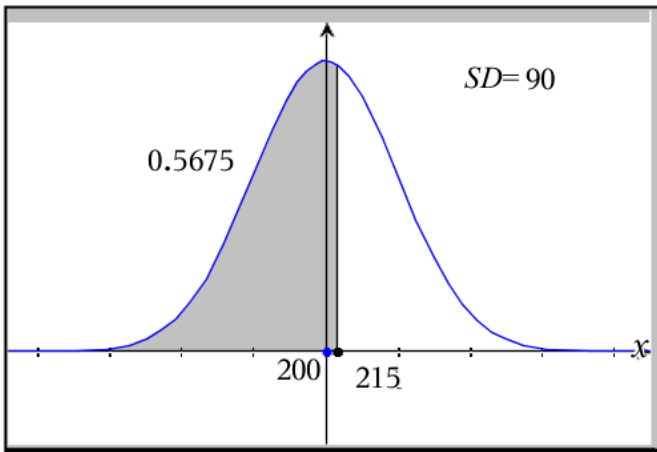


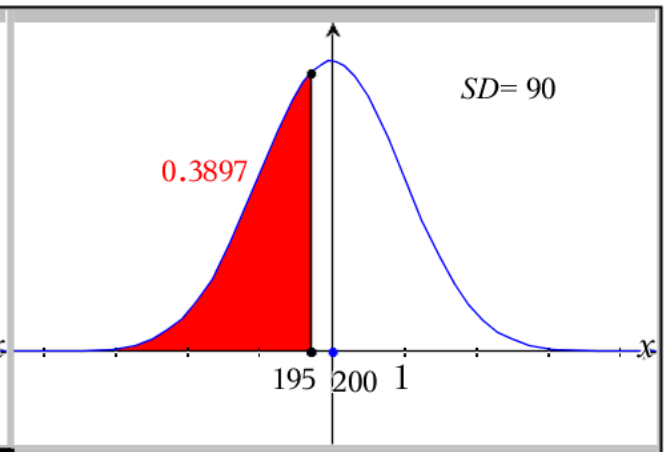
To find the area between -0.28 and 0.17

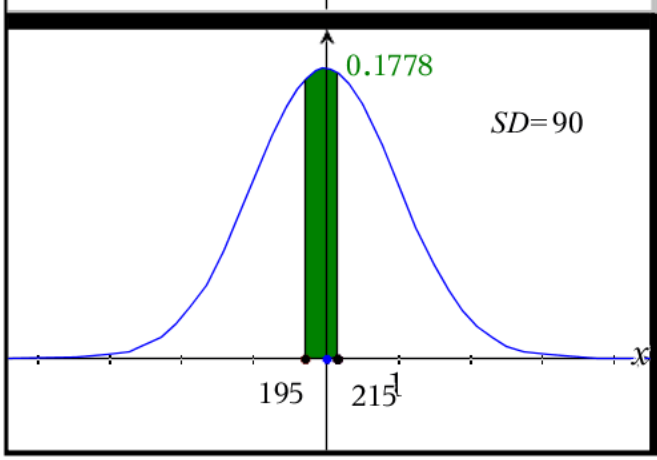
Subtract 0.5675 and 0.3897

0.5675 − 0.3897 =0.1778

So P(-0.28 ≤ z ≤ 0.17)=0.1778







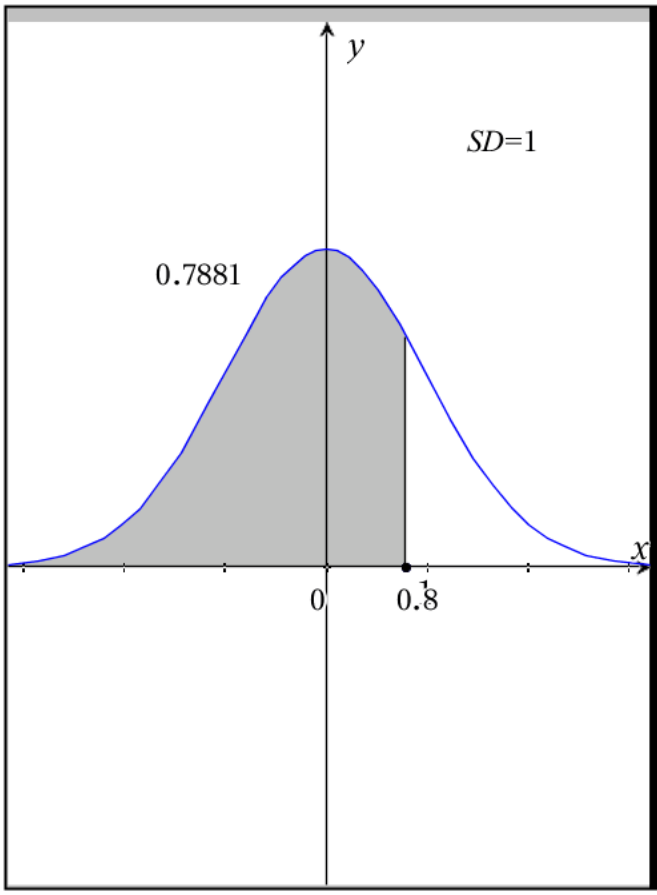
To find the area between 195 and 215

Subtract 0.5675 and 0.3897

0.5675 − 0.3897 =0.1778

So P(195 ≤ x ≤ 215)=0.1778

Problem 5



mean =500 SD =90

P(x≤ T)=0.7894

look up 0.7894 in the Z Chart

(THIS MEANS IN THE MIDDLE)

The closest area is 0.7881 ,

which gives us our z score **z_t** = 0.8

$0.8 = \frac{t-500}{90}$

$0.8\,(90) = t-500$

$72. = t-500$

$72. + 500 = T$

T=572.