Problem 1

mean = 150 SD =80

P(x ≤195) =_____

This means SHADE LEFT of 195

P(x ≤195) ≈0.7123

P(z ≤0.56) =_____

This means SHADE LEFT of 0.56

P(z ≤0.56) ≈0.7123

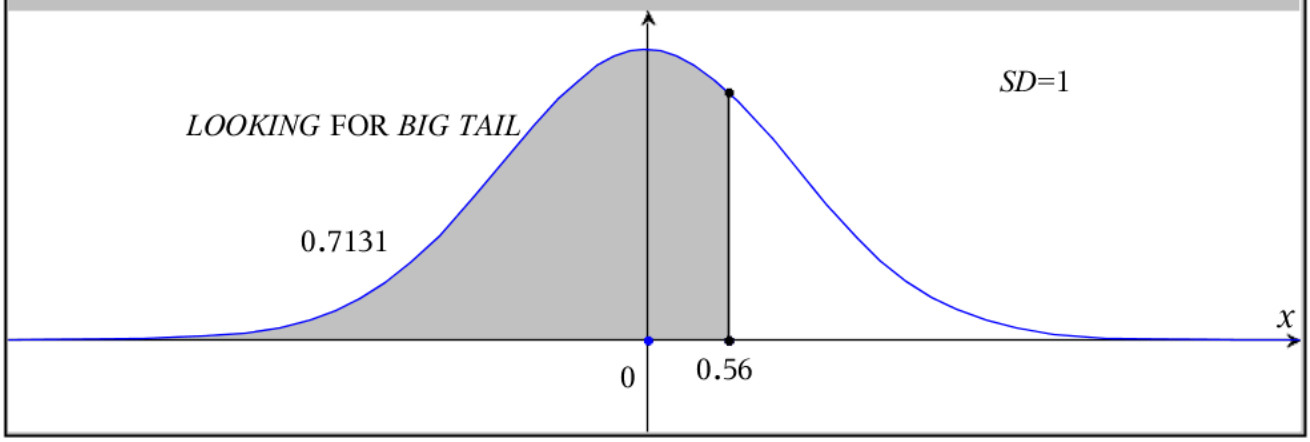
$Z = \frac{x-150}{80}$

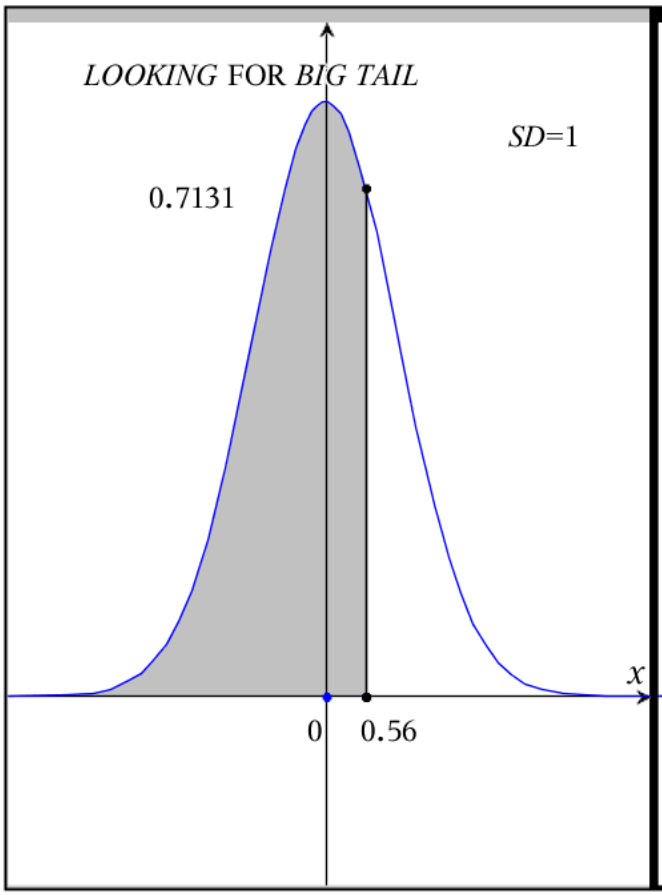
$Z = \frac{195-150}{80.} = 0.56$

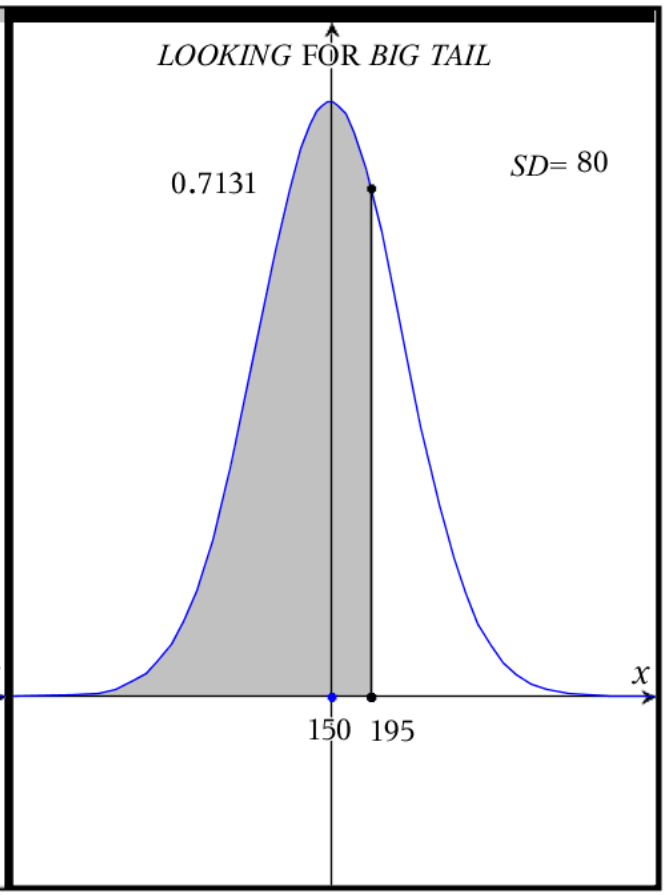
This Z score leads to a BIG TAIL of 0.7123

This Z score leads to a SMALL TAIL of

1−0.7123 =0.2877







Problem 2

mean = 165 SD =50

P(x ≥170) =0.4562

This means SHADE RIGHT of x=170

P(Z ≥0.1) =0.4602

This means SHADE RIGHT of z=0.1

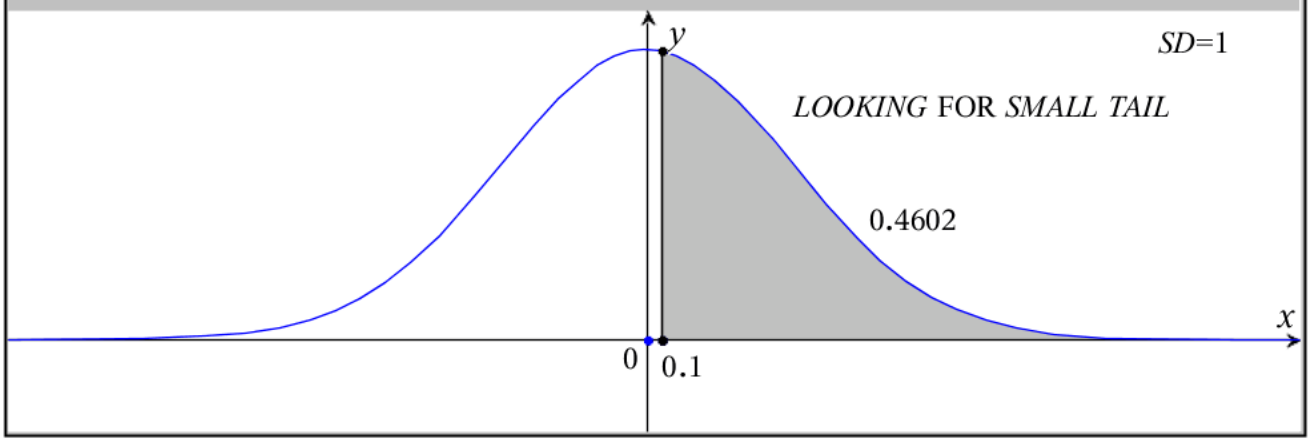
$Z = \frac{x-165}{50}$

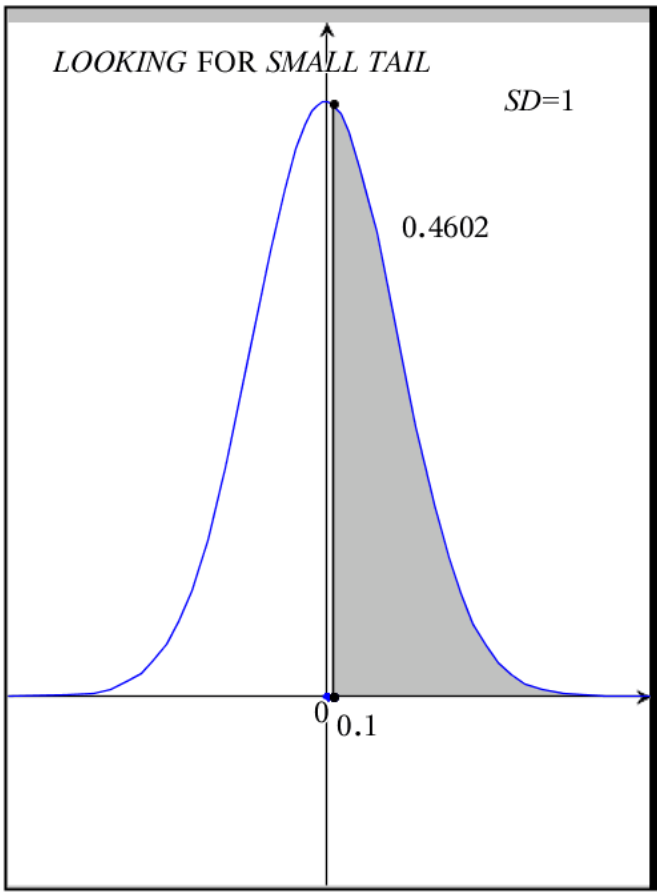
$Z = \frac{170-165}{50.} \approx 0.1$

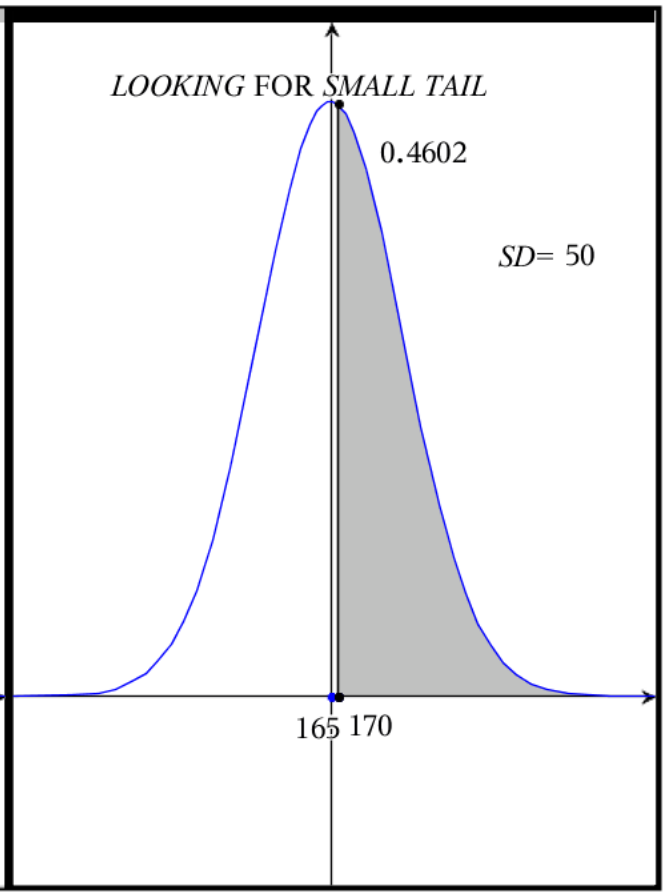
This Z score leads to a BIG TAIL of 0.5398

This Z score leads to a SMALL TAIL of

$1-0.5398 = 0.4602$







Problem 3

mean = 170 SD =25

P(x ≤160) =_____

This means SHADE LEFT of 160

P(x ≤160) ≈0.3446

P(z ≤-0.4) =_____

This means SHADE LEFT of -0.4

P(z ≤-0.4) ≈0.3446

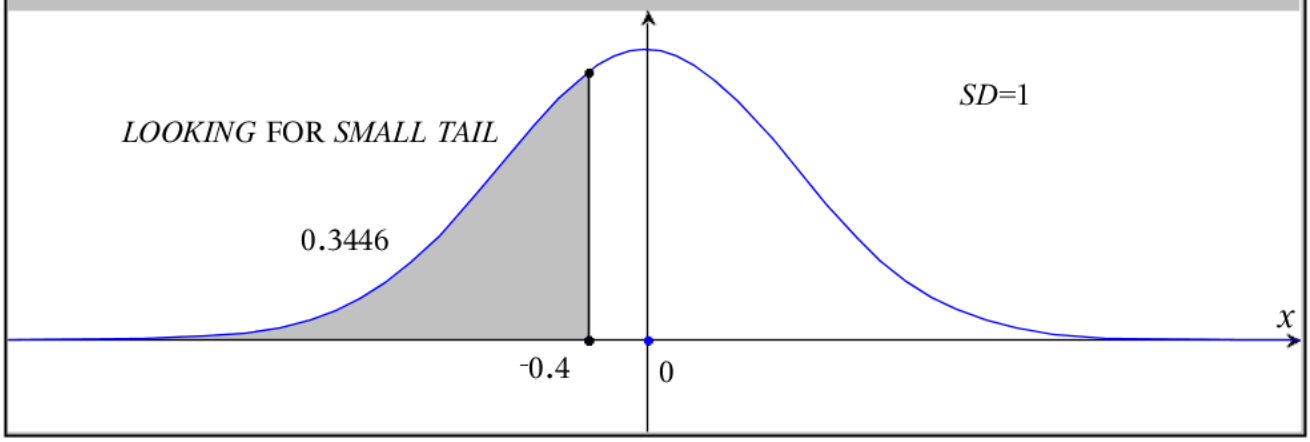
$Z = \frac{x-170}{25}$

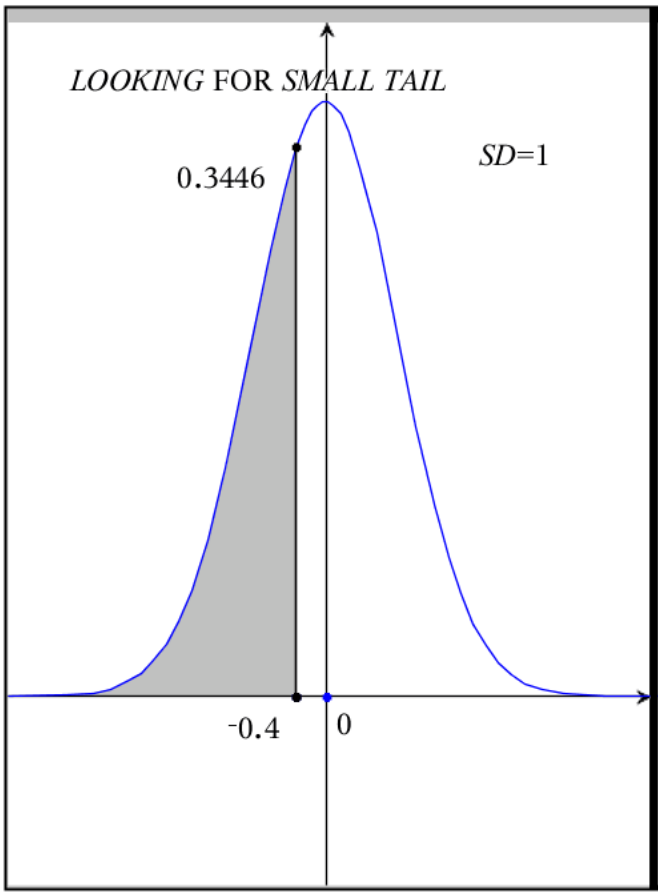
$Z = \frac{160-170}{25.} = -0.4$

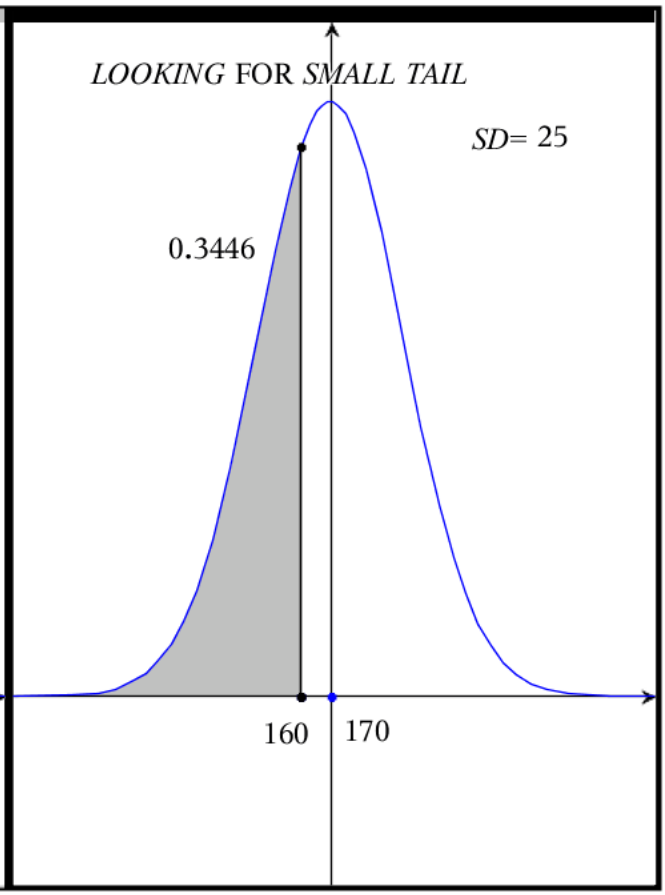
This Z score leads to a BIG TAIL of 0.6554

This Z score leads to a SMALL TAIL of

1−0.6554 =0.3446







Problem 4

mean = 190 SD =60

P(x ≤185) =_____

This means SHADE LEFT of 185

P(x ≤185) ≈0.4013

P(z ≤-0.25) =_____

This means SHADE LEFT of -0.25

P(z ≤-0.25) ≈0.4013

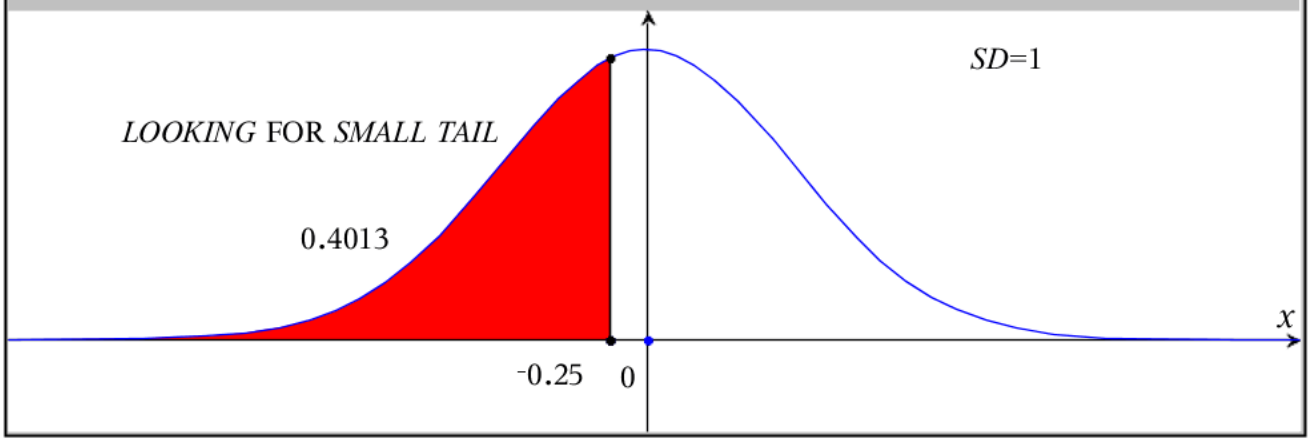
$Z = \frac{x-190}{60}$

$Z = \frac{185-190}{60.} = -0.08$

This Z score leads to a BIG TAIL of 0.5987

This Z score leads to a SMALL TAIL of

1−0.5987 =0.4013



mean = 190 SD =60

P(x ≤210) =_____

This means SHADE LEFT of *x_given2*

P(x ≤210) ≈0.6293

P(z ≤0.33) =_____

This means SHADE LEFT of 0.33

P(z ≤0.33) ≈0.6293

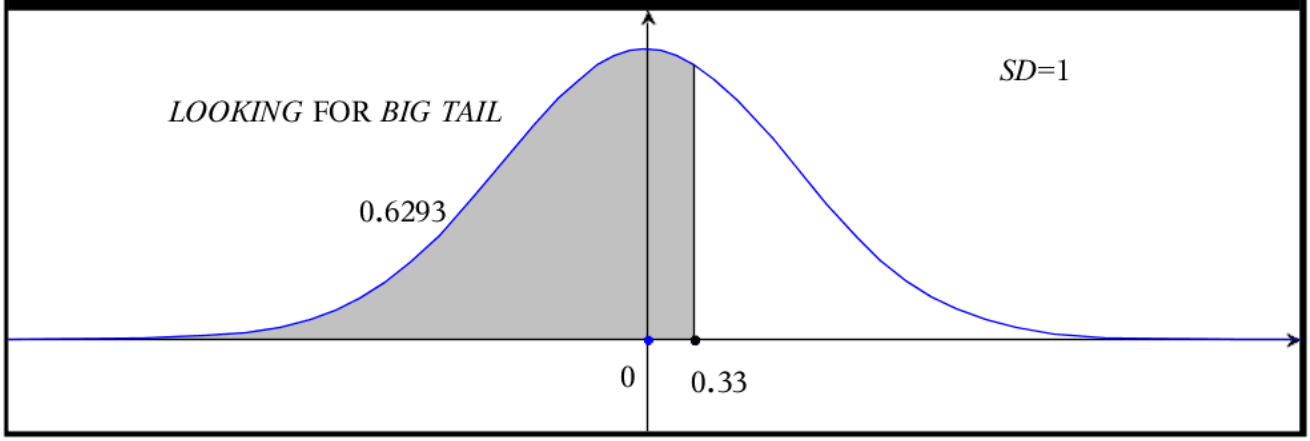
$Z = \frac{x-190}{60}$

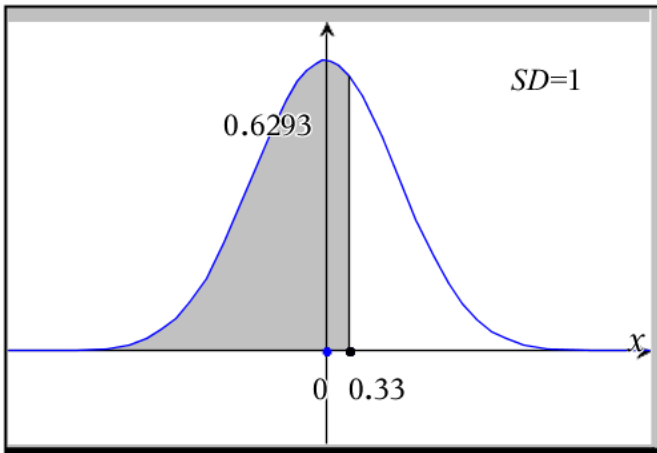
$Z = \frac{210-190}{60.} = 0.33$

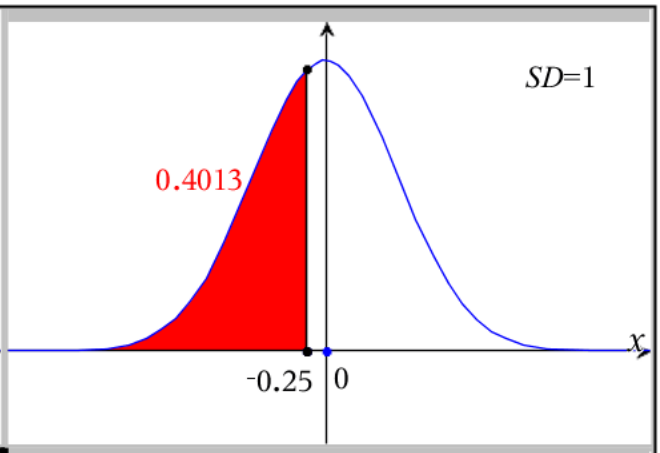
This Z score leads to a BIG TAIL of 0.6293

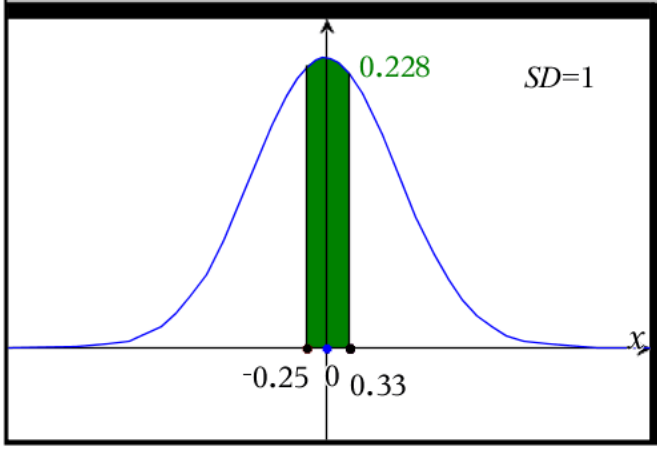
This Z score leads to a SMALL TAIL of

1−0.6293 =0.3707







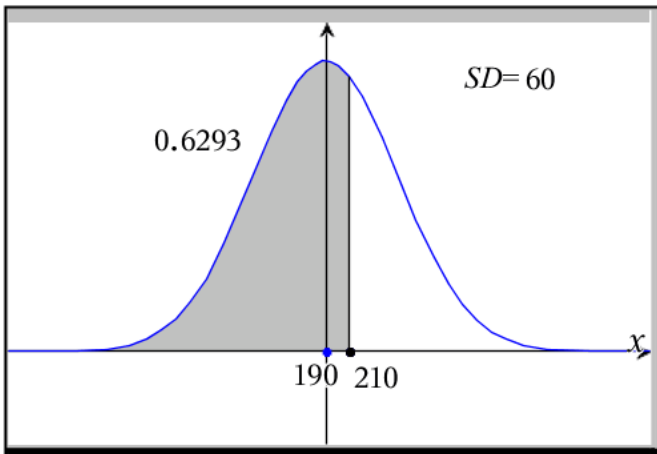


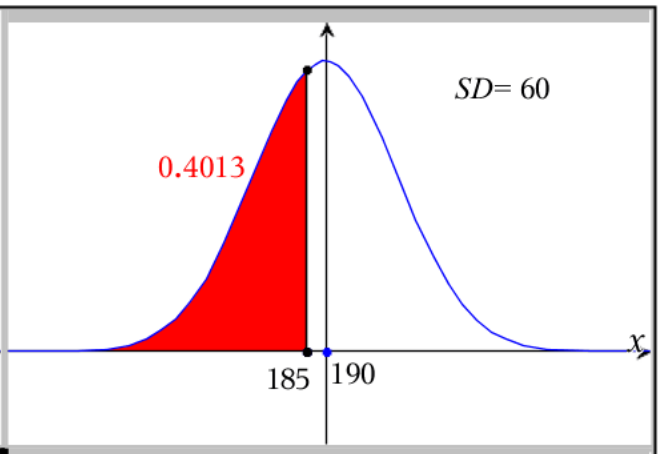
To find the area between -0.25 and 0.33

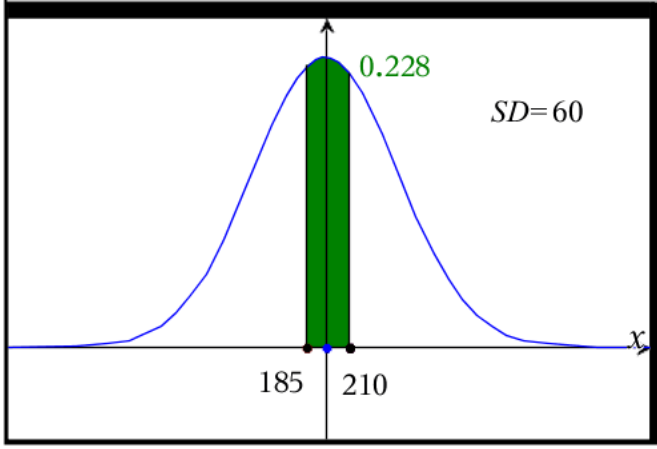
Subtract 0.6293 and 0.4013

$0.6293 - 0.4013 = 0.228$

So $P(-0.25 \le z \le 0.33) = 0.228$







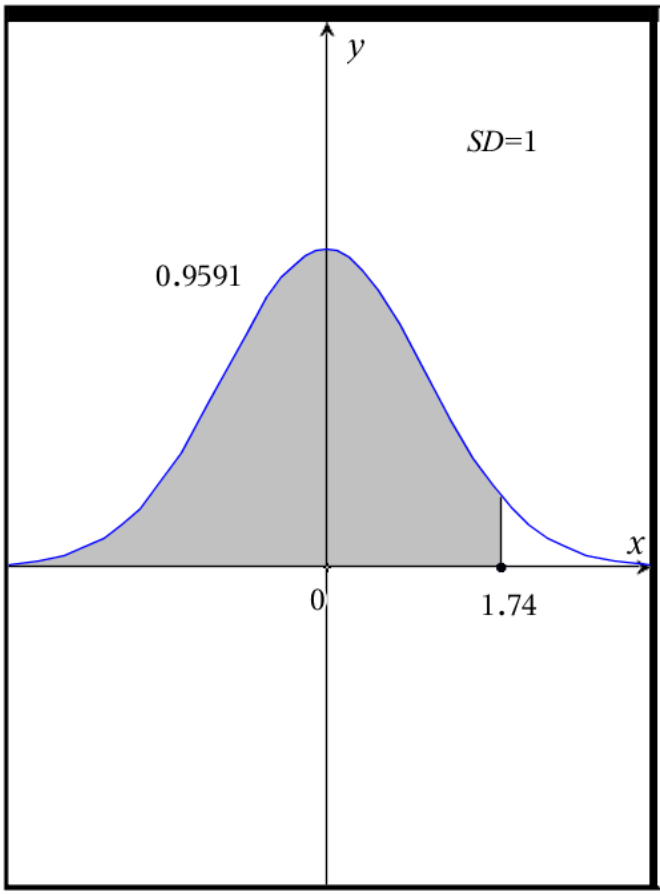
To find the area between 185 and 210

Subtract 0.6293 and 0.4013

$0.6293 - 0.4013 = 0.228$

So $P(185 \le x \le 210) = 0.228$

Problem 5



mean = 300 SD = 80

P(x ≤ T) = 0.9592

look up 0.9592 in the Z Chart

(THIS MEANS IN THE MIDDLE)

The closestarea is 0.9591 ,

which gives us our z score z_t = 1.74

$1.74 = \frac{t-300}{80}$

$1.74\ (80) = t-300$

$139.2 = t-300$

$139.2 + 300 = T$

T=439.2