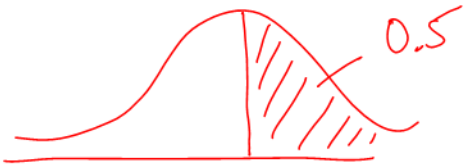
9.2-9.4 Cont'd

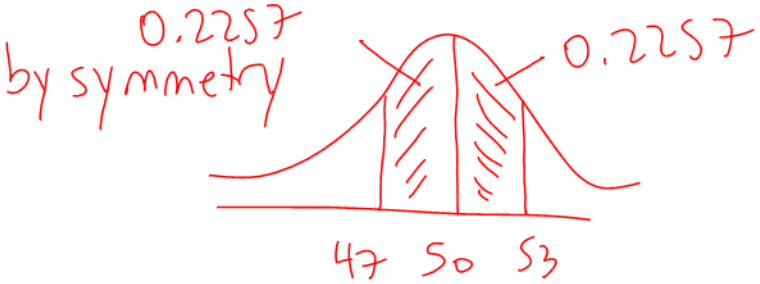
Ex: (Conceptual)

A data set is normally distributed with a mean of 50 and a standard deviation of 5. The probability that a measurement is between 50 and 53 is 0.2257. Find the probability that a measurement is:

a) greater than 53

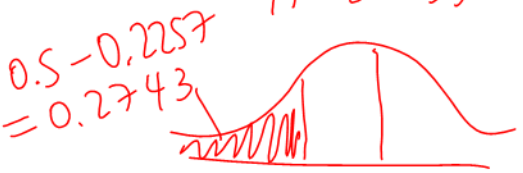


b) between 47 and 53



0.4514

c) less than 47



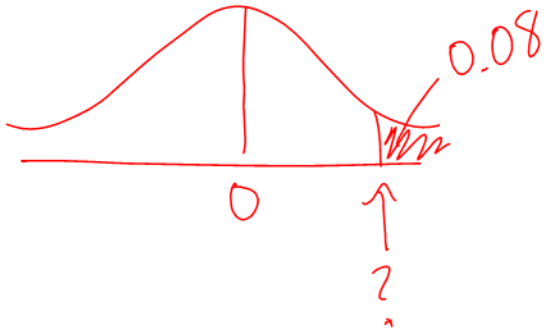
d) between 47 and 50

e) exactly 53

0

Ex: A data set is normally distributed with a mean of 0 and a standard deviation of 1.

a) Find the value that separates the highest 8% of the measurements.

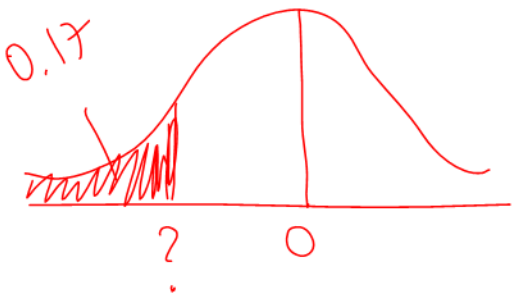


Select "Value from an area"
Input area, mean, st. dev.
Select above / below / between
Hit recalculate

See Screenshot on last page. →

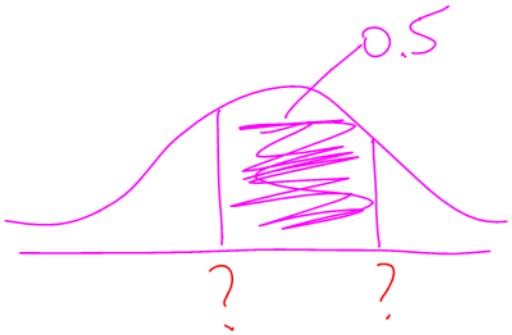
1.405

b) Find the value that separates the lowest 17% of the measurements.



−0.954

c) Find the values that separates the middle 50% of the measurements.

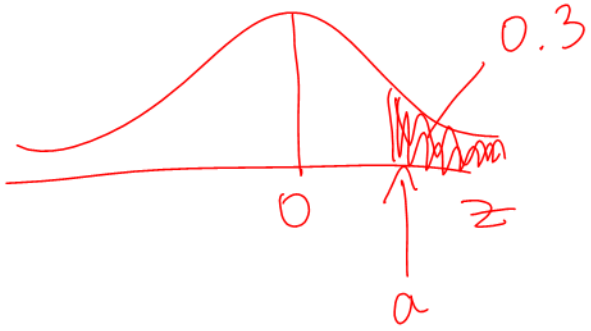


-0.674 & 0.674

Ex: A data set is normally distributed with a mean of 0 and a standard deviation of 1.

a) Find a so that $P(z > a) = 0.3$

z = variable
a = constant (#)



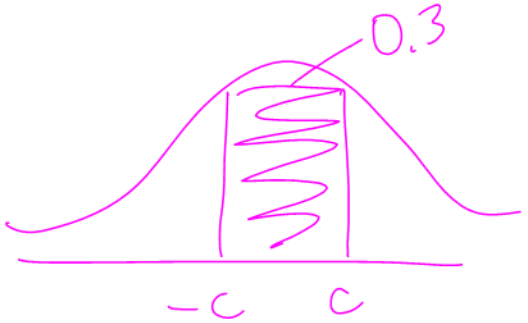
$a = 0.524$

b) Find b so that $P(z<b) = 0.45$

b = constant (#)

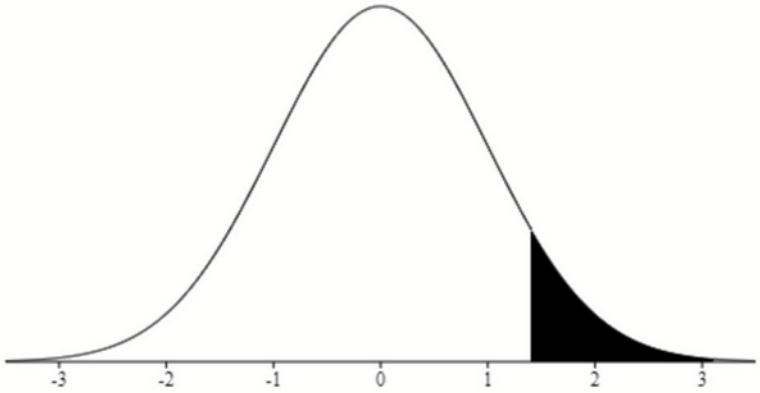
$b = -0.126$

c) Find c so that $P(-c<z<c) = 0.3$



-0.385 to 0.385

$c = 0.385$



○ Area from a value (Use to compute p from Z)
◉ Value from an area (Use to compute Z for confidence intervals)

Specify Parameters:

Area	0.08
Mean	0
SD	1

Results:

Recalculate

◉ Above 1.405
○ Below
○ Between
○ Outside