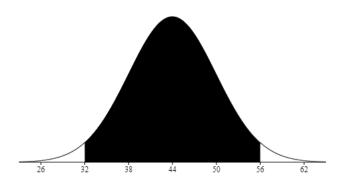
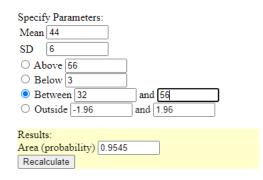
## **DSO101 Lesson 5 The Normal Distribution Study Guide**

If you don't love math, you can use the **<u>Probability Calculator</u>** for an online Normal Probability calculator used for Questions 1 – 3, 7, 8, 9, 10, 11, 12

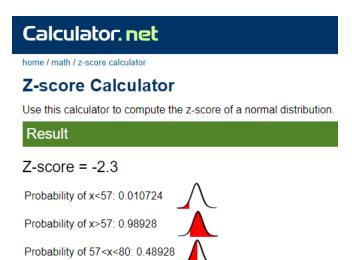
HyperStat Online Home Page



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



**Z-Score Calculator:** Use <u>this website</u> to calculate z-scores easily for question 4 & 5. Remember you need a mu value, sigma value and x value to calculate the Z score.



## Steps:

$$Z \text{ score} = \frac{x - \mu}{\sigma}$$
$$= \frac{57 - 80}{10}$$
$$= -2.3$$

P-value from Z-Table:

P(x<57) = 0.010724

P(x>57) = 1 - P(x<57) = 0.98928

P(57 < x < 80) = 0.5 - P(x < 57) = 0.48928

Raw Score, <b>x</b>	57
Population Mean, <b>µ</b>	80
Standard Deviation, $\sigma$	10
Calculate (	Clear

Question 6 will require you to solve for the sigma:

If x = 270, mu = 225, and the z-score is 1.5, what is sigma? 1.5 = (270 - 225) / sigma.

Hint: The mean of a child distribution will always be the same as the parent, but the standard deviation will be smaller.