

In this worksheet, we will work with the sample size determination functions of EnvStats. First identify the nature of the testing problem: Is it testing for mean, or proportion etc and then find the corresponding function in EnvStats. All the references below (3.14, Exercise 3.7 etc) are from M and N book.

1.

Consider the copper data shown in Table 3.14 of Exercise 3.7 in Chapter 3. Combine the data from Wells 1 and 2, and compute the pooled estimate of standard deviation allowing for different means for the background and compliance well data.

- a. Based on this estimate of standard deviation, how many samples are required at the background and compliance wells in order to achieve a confidence interval half-width of 5 ppb?
- b. Repeat part **a** above, but assume the background well sample size is fixed at $n_2 = 12$.

2.

Sometimes when the results of an opinion poll are reported, the results are qualified by a statement something like the following: “53% of those polled said they were willing to pay higher taxes to enforce stricter environmental standards. These results are accurate to within three percentage points.” Assuming this statement means that the 95% confidence interval for the estimated proportion has a half-width of three percentage points, determine how many people must have been polled. Assume the estimated proportion is about 50%.