

CWR 3540 – WATER RESOURCES ENGINEERING – Fall 2023

Assigned Study Material: Modules 2 and 3

Homework Set No.3:

Required Problem A: see statement below*

***Problem A:** For all the results of Example 2.6, which are plotted in Figure 2.6 and tabulated in Table 2.7, determine the constants A and B for Equation 2.15, using linear (or non-linear, at your discretion) regression analysis. Report the final A and B values and the coefficient of determination (i.e., R-squared) for each set of regressed data. Do notice that the solution of Equation 2.15 for each documented Return Period (i.e., 10 and 20 years) should represent the curves of Figure 2.6. Both Equation 2.15 and curves of Figure 2.6 may be used by governmental agencies and engineering practitioners.

Required Problem B: See statement below**

****Problem B:** Using the Thiessen Polygon method for the area that is described in Figure P 2.13 (p. 62), which is part of Problem 2.13 (i.e., p. 62), determine the annual precipitation (in *inches*). In your analysis consider only stations C, D and F within the area boundaries with precipitation records of 3.5, 5.1 and 4.5 inches, respectively (i.e., ignore all other stations).

Due on September 21, 2023 (at the start of the lecture; student should keep a personal copy)

Recommended Practice Problems: 2.4, 2.6, 2.7, 2.10, 2.12, 2.15

Exam No. 1: Thursday, September 28, 2023