Exam Questions/Data Analysis for Risk and Security Management *Prof. Dr. Dirk Drechsler*

#15 (Total 10 Points)

(1)
$$\hat{y}_1 = 19,85 + 0,745 * 1 = 20,595$$

(2)
$$y_1 - \hat{y}_1 = 10 - 20,595 = -10,595$$

(3)
$$FC = 19.85 + 0.745 - 11.565 = 9.030$$

(4)
$$FCE = 10 - 9,030 = 0,970$$

(5)
$$Sq_{FCE} = 0.970^2 = 0.9409$$

(6)
$$\vartheta_1 = 19.85 + 0.745 + (0.2 * 0.970) = 20.789$$

(7)
$$b_1 = 0.745 + (0.2 * 0.1 * 0.970) = 0.764$$

(8)
$$sn_1 = -11,565 + [(1 - 0.2) * 0.1 * 0.970] = -11,487$$

(9)
$$s^2 = \frac{20,081}{16-3} = 1,5447$$

$$(10) \quad s = \sqrt{1,5447} = 1,2429$$