

問4 40回 2級

$$\textcircled{1} S_R = \frac{S_{xy}^2}{S_{xx}} = \frac{729.1^2}{82.2} = 6466.99 \quad \textcircled{4}$$

(18) 4

$$S_e = S_T - S_R = 6650 - 6466.99 = 183.007 \\ \approx 183.01 \quad \textcircled{5}$$

(19) 5

$$\phi_R = 1, \phi_e = 19 - 1 = 18$$

$$V_R = \frac{S_R}{\phi_R} = 6466.99$$

$$V_e = \frac{S_e}{\phi_e} = \frac{183.01}{18} = 10.167 \approx 10.17 \quad \textcircled{6}$$

(20) 1

$$F_0 = \frac{V_R}{V_e} = \frac{6466.99}{10.17} = 635.888 \approx 635.89 \quad \textcircled{7}$$

(21) 1

$$F(\phi_R, \phi_e; \alpha) = F(1, 18; \frac{0.05}{0.01}) = \frac{4.41}{8.29}$$

有意水準1%で H_0 は棄却

x と y に正の直線的関係がある。 $\textcircled{8}$

(22) 1

$\textcircled{2}$

$$y_i = \beta_0 + \beta_1 x_i + \epsilon_i$$

$$\hat{\beta}_1 = \frac{S_{xy}}{S_{xx}} = \frac{729.1}{82.2} = 8.8698 \approx 8.87 \quad \textcircled{9}$$

(23) 1

$$\hat{\beta}_0 = \bar{y} - \hat{\beta}_1 \bar{x} \quad \bar{y} = \frac{4440}{20} = 222$$

$$= 222 - 8.87 \times 24 \quad \bar{x} = \frac{480}{20} = 24$$

$$= 9.12 \quad \textcircled{10}$$

(24) 1

$\textcircled{3}$

$$y = \hat{\beta}_0 + \hat{\beta}_1 x$$

$$= 9.12 + 8.87 \times 25$$

$$= 230.87 \approx 230.9 \quad \textcircled{11}$$

(25) 1