

$$(1) \bar{x} = \frac{4 + 5 + 6}{3} = 6$$

$$\bar{y} = \frac{9 + 8 + 6}{3} = 7.67$$

$$(2) \hat{\beta} = \frac{(4 - 6)(9 - 7.67) + (5 - 6)(8 - 7.67) + (9 - 6)(6 - 7.67)}{(4 - 6)^2 + (5 - 6)^2 + (9 - 6)^2}$$
$$= -0.57$$

$$(3) \hat{\alpha} = 7.67 + 0.57 \times 6 = 11.09$$

$$(4) \hat{y} = 11.09 - 0.57x$$

$$(5) x = 1, y = 11.09 - 0.57 * 1 = 10.52$$