

$$(1) \mu_1 - \mu_2 = \bar{x} - \bar{y} = 85 - 78 = 7$$

$$(2) 7 \pm 1.645 \sqrt{\frac{154}{50} + \frac{146}{40}}$$

$$= 7 \pm 1.645 \times 2.59$$

$$= 7 \pm 4.26 \rightarrow (2.74, 11.26)$$