2. (i) $\frac{72+34+28+51+68+51+44}{7} = \boxed{49.71}$

(iii) $\frac{28+51+28+44+72+68+34}{7} = \boxed{46.43}$

3. $\frac{91-83}{4.3} = 1.860$

$\frac{68-74}{7.3} = 1.918$

A score of 88 is a better score (relative to the performance of others) because it results in a higher t-score than a score of 91 does. A higher t-score implies a higher percentile

4. (a) The correct answer is (i)

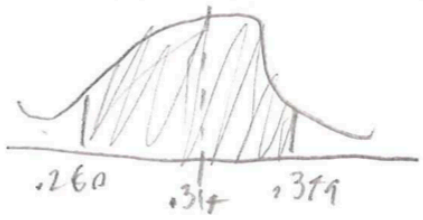
(b) Yes. In that case, $\mu_1 - \mu_2$ will be 0 and this value falls within the confidence interval

5. (a) $\frac{217}{689} = .314$

$\sqrt{\frac{.314(.686)}{689}} = SE = .017$

$(.314) \pm .017 \times 1.96$

$(.280, .348)$



(b) less wide

(c) The correct answer is (iv)

6. (a) $H_0: \mu = 7 pH$

$H_a: \mu \neq 7 pH$

(b) $n = 150$ the larger the sample size the smaller standard error is

(c) A type II error would mean that we concluded that the average spring water pH is NOT different than 7 when it actually is.

(d) We fail to reject the null hypothesis.

(e) (iv)