Ex 3

a) Two measurements X_i and Y_i each person. Paired data

X_i and Y_i dependent, Student two-sample test is invalid

b) $D_i = X_i - Y_i$ indepdent. $\sim N(\mu, \sigma^2)$

95% CI for $\mu = E(D_i) = E(X_i) - E(Y_i)$

$\bar{D} \pm c \cdot se(\bar{D}) = 3.29 \pm 3.86 = (-0.57, 7.15)$

where $c = 97.5$ perc t-distr. with $df = n - 1 =$

$se(\bar{D}) = \frac{s^2}{\sqrt{n}} = 1.58$ $\Rightarrow c = 2.446$

$s^2 = \frac{1}{n-1} \sum (D_i - \bar{D})^2 = 17.5 = 4.18$