Answer on Question #76541 – Math – Statistics and Probability

in the study, n = 45 men were put on a diet. the men who dieted lost an average of 7.0 kg, with a standard deviation of 3.7 kg.

Question

a) compute the standard error of the mean for the men who dieted.

Solution

$$SE = \frac{s}{\sqrt{n}} = \frac{3.7}{\sqrt{45}} = 0.5516$$

Question

b) compute an approximate 95% confidence interval for the mean weight loss for the mean who dieted. an approximate 95% confidence interval is to kg.

Solution

$$E = t_{\frac{\alpha}{2}} SE$$

The value of $t_{\frac{\alpha}{2}}$ can be determined from the *t*-distribution table or calculated using the technology (function T.INV.2T() of MS Excel).

For *df* = 44 and α = 0.05, $t_{\frac{\alpha}{2}} = 2.015$

$$E = 2.015 \times 0.5516 = 1.1$$

Lower endpoint = $\bar{x} - E = 7 - 1.1 = 5.9$

Upper endpoint = $\bar{x} + E = 7 + 1.1 = 8.1$

95% interval is (5.9, 8.1)