Homework Solutions
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Exercise 13

(a) Let μ be the average concentration of cadmium in the leaf lettuce. The hypotheses are

$H_0: \quad \mu = 12$
$H_1: \quad \mu > 12$

(b) The test statistic is $t = \dfrac{\overline{x} - \mu_0}{s/\sqrt{n}}$. Use `1-Var-Stats` to find $\overline{x}$ and s. We get $\overline{x} = 18$ and $s = 10.677$. So $t = \frac{18-12}{10.677\sqrt{6}} = \frac{6}{4.359} = 1.3765$ and the p-value is `tcdf(1.3765,E99,5)` $= 0.1136$.

(c) The sampled population must be normal.

(d) It means that if the average cadmium concentration really is 12, then there is an 11.36% chance that we would see an average as high as 18 in a sample of size 6.

(e) No. The p-value is greater than α.