

Tests of Hypothesis: One Sample

8.1 Determining the Claim, Null and Alternative Hypotheses

For the problems below, examine the given statement and express the null and alternative hypothesis in symbolic form:

- a. The average lifespan of a domestic shorthair cat is greater than 15 years.
- b. The average weight of women at FIU is no more than 140 pounds.
- c. The mean amount of time to finish a 30 question statistics final exam is at least 90 minutes.
- d. A researcher claims that the average child's book bag weighs less than 30 pounds.

Answers:

a. *Claim* : $\mu > 15$

$$H_0 : \mu \leq 15$$

$$H_a : \mu > 15$$

b. *Claim* : $\mu \leq 140$

$$H_0 : \mu \leq 140$$

$$H_a : \mu > 140$$

c. *Claim* : $\mu \geq 90$

$$H_0 : \mu \geq 90$$

$$H_a : \mu < 90$$

d. *Claim* : $\mu < 30$

$$H_0 : \mu \geq 30$$

$$H_a : \mu < 30$$