

## Hypothesis Testing Review

Show all steps for each hypothesis test.

1. A sociologist wishes to see if it is true that for a certain group of professional women, the average age at which they have their first child is 28.6 years. A random sample of 36 women is selected, and their ages at the birth of their first children are recorded. At  $\alpha = 0.05$ , does the evidence refute the sociologist's assertion?

32	28	26	33	35	34	29	24	22	25	26
28	28	34	33	32	30	29	30	27	33	34
28	25	24	33	25	37	35	33	34	36	38
27	29	26								

2. A real estate agent believes that the average closing cost of purchasing a new home is \$6500 over the purchase price. She selects 40 new home sales at random and finds that the average closing costs are \$6600. The standard deviation of the population is \$120. Test her belief at  $\alpha = 0.05$ .

3. In a New York modeling agency, a researcher wishes to see if the average height of female models is really less than 67 inches, as the chief claims. A sample 30 models has an average height of 65.8 inches. The standard deviation of the sample is 1.7 inches. At  $\alpha = 0.05$ , is the average height of the models really less than 67 inches? Use the P-value method.