For each of the problems, test the given claim using the indicated method. Specifically show the following steps:

Steps 1-3: Determine the null and alternative hypotheses.
Step 4: Determine significance level α (usually given, otherwise use $\alpha = .05$).
Step 5: Verify Requirements to determine which test statistic to use. [For proportion p, use z (normal dist.)]
Step 6(a): Find the test statistic.
Step 6(b): Determine whether to use a Right-, Left-, or Two-Tailed Test. Sketch the picture.
Find the critical value (traditional method) or the P-value (P-value method). Label the picture.
Step 7: Make a conclusion about the null hypothesis. [Reject H_0 if test stat in critical region or P-value $\leq \alpha$]
Step 8: Reword the conclusion in nontechnical terms that relate back to the ***original claim***. [See flowchart]

1. In a survey of 42 random student athletes it was found that 34 of them had a gpa of 3.0 or higher. The school claims that more than 70% of their athletes have a gpa of 3.0 or higher. Test this claim using both methods and a significance level of $\alpha = 0.1$

2. A large company claims that 50% of its employees are women. A random sample of 220 employees found that 123 were female. Test the claim using both methods and a significance level of $\alpha = 0.05$.

3. A single die is rolled 60 times and 15 ones are rolled. A person claims that the die is loaded to favor ones. Test this claim using the TRADITIONAL method and a significance level of

(a). $\alpha = 0.05$

(b). $\alpha = 0.01$