PROBLEM 1

(A) 124.1
(B) \( Z \sim N(0,1) \)
(C) (113.7, 134.5)

We are 90% confident that Timmy's true bowling average is between 113.7 and 134.5.

(D) Wider. Higher confidence means larger error.

(E) \( H_0: \mu \leq 105 \quad v. \quad H_A: \mu > 105 \) (claim)

- Test statistic \( Z = 18.04 \)
- \( P\)-Value \( \approx 0 \)
- Reject \( H_0 \)

At the 5% significance level, there is sufficient evidence to support the claim that Timmy's bowling average is above 105.

PROBLEM 2

(A) \( \bar{x} = 37.803 \quad \text{Margin of Error} = 3.753 \)

(B) \( n = 16 \)

PROBLEM 3

(A) \( H_0: \mu \geq \mu_0 \quad v. \quad H_A: \mu < \mu_0 \)

(B) \( H_0: \mu = 14 \quad v. \quad H_A: \mu \neq 14 \)

(C) \( H_0: \mu \leq 2600 \quad v. \quad H_A: \mu > 2600 \)

(D) \( H_0: \mu \leq 150 \quad v. \quad H_A: \mu > 150 \)
Problem 4

(A) \( T\) - Distr. on 39 df.

(B) \((7.1322, 8.1678)\)
   We are 98\% confident that the true mean birth weight is between 7.1322 and 8.1678 pounds.

(C) \((7.227, 8.073)\) \(Z\) - Distribution

Problem 5

(A) \(H_A: \mu < 10\)

(B) We can conclude that p-value < 0.05
   \(\therefore\) we would also reject \(H_0\) at \(\alpha = 0.10\)
   We would not necessarily reject \(H_0\) at \(\alpha = 0.01\)

(C) p-value = 0.0918
   Fail to reject \(H_0\)

(D) p-value = 0.1835 \(\Rightarrow\) Fail to reject \(H_0\)

Problem 6

\(\mu = \) pop. mean NFL salary (in millions)

\(H_0: \mu \leq 1\) \( v. \) \(H_A: \mu > 1\) (claim)

\(z = 0.79\)

P-VALUE = 0.2151

Fail to reject \(H_0\)

At the 5\% sig. level, there is insufficient evidence to support the claim that NFL players earn more than an avg. of $1 Million