(Continued)

and

$$\sigma_{\text{x-bar}} = \frac{\sigma}{\sqrt{N}}$$

So, first let's get the standard error of the mean:

$$\sigma_{\text{x-bar}} = \frac{15}{\sqrt{36}}$$
$$= \frac{15}{6}$$
$$= 2.50$$
$$z = \frac{90 - 80}{2.50}$$
$$z = \frac{10}{2.50}$$
$$z = +4.00$$

5. Do I reject or fail to reject the null hypothesis? What does this mean in plain English?

   A: Because the test statistic of $z = 4.00$ is greater than the critical value of ±2.17, the test statistic of 4.00 falls in the region of null hypothesis rejection, and I reject the null hypothesis. That means it appears my current class did score differently (and better) than the historical mean on this exam.

6. Write this result in proper APA style.

   A: $z\,(N = 36) = 4.00,\ p < .03$