7.82

It costs you \$10 to draw a sample of size $n = 1$ and measure the attribute of interest. You have a budget of \$1,500. $\Rightarrow n = 150$

a. Do you have sufficient funds to estimate the population mean for the attribute of interest with a 95% confidence interval 4 units in width? Assume that $\sigma = 12$.
b. If you used a 90% confidence level, would your answer to part **a** change? Explain.

a. $CI_{95\%}(\mu) = \left(\bar{x} \mp z_{0.025} \frac{s}{\sqrt{n}}\right)$

Sampling error of the $CI_{95\%}(\mu) = 2$

If $n = 150$

$z_{0.025} \cdot \frac{s}{\sqrt{n}} = 1.96 \frac{12}{\sqrt{150}} = 1.92 \Rightarrow$ The answer is yes

b. yes, because the width of $CI_{90\%}(\mu)$ is less than that of $CI_{95\%}(\mu)$.