Estimate required sample size for a 95% C.I. of body mass index among teenagers ages 14 to 17 in Tampa, FL.

Parameters:
- Margin of error: 1.5 units
- Assumed SD: 4.8
- Desired C.I.: 95% (i.e. $z = 1.96$)

$$n = \left( \frac{Z\sigma}{E} \right)^2 = \left( \frac{1.96 \times 4.8}{1.5} \right)^2 = \_\_\_\_$$
Continuous Outcome – One Sample (H₀ Test)

**Practice Exercise**

**Sample Size for Hypothesis Test**

**Example:** Compare mean fasting cholesterol level in a sample of intensive swimmers to known values in the general population.

- **H₀:** \( \mu = \mu_0 \)
- **Parameters/Assumptions:**
  - General pop mean: \( \mu_0 = 194.4 \) mg/dL
  - General pop SD: \( \sigma_0 = 34.8 \) mg/dL
  - Clinically important difference: 20 mg/dL
  - 2-sided type I error rate \( (\alpha) \): 0.05
  - Desired power \((1-\beta)\): 0.80

**Formula:**

\[
 n = \left( \frac{Z_{1-\alpha/2} + Z_{1-\beta}}{\text{ES}} \right)^2
\]

**ES Calculation:**

\[
 ES = \left| \frac{\mu_1 - \mu_0}{\sigma} \right|
\]

\[
 ES = \left| \frac{\mu_1 - \mu_0}{\sigma} \right| = \boxed{__________}
\]

**Sample Size Calculation:**

\[
 n = \boxed{__________}
\]