What n is needed for 80% power with $g=3$, $\mu_1=2.82$, $\mu_2=3.89$, $\mu_3=3.04$ and $\sigma^2=.075$? Use $\alpha=.05$.

$$\bar{\mu} = \frac{\mu_1+\mu_2+\mu_3}{3} = 3.25$$

$\alpha_1 = 2.82-3.25=-.43$, $\alpha_2=.64$, $\alpha_3=-.21$

Then $\sum \alpha_i^2 = .6386$, and the ratio

$$\frac{\sum \alpha_i^2}{\sigma^2} = \frac{.6386}{.075} = 8.51$$