Appendix A.

Worked-out calculations of power. The calculations are based on more significant digits than are displayed.

Power with \( p_C = .02 \) and \( p_I = .01 \)

Risk Difference
\[
\Delta_1 = .02 - .01 = .01,
\]
\[
p = (.02 + .01)/2 = .015
\]
\[
se_{1Null} = \sqrt{2 (\cdot015) (1 - .015)} = .1719
\]
\[
se_{1Alt} = \sqrt{.02 (1-.02) + .01 (1-.01)} = .1718
\]
\[
z = (.01 / \sqrt{2000 - 1.96 \times .1719})/ .1718 = .642
\]
\[
\text{power} = \text{NormalCDF}(.642) = .74
\]

Relative risk
\[
\Delta_2 = \log(.02/.01) = .69,
\]
\[
p = (.02 + .01)/2 = .015
\]
\[
se_{2Null} = \sqrt{2 (1 - .015) / .015} = 11.46
\]
\[
se_{2Alt} = \sqrt{(.02 + (1-.01))/.01} = 12.17
\]
\[
z = (.69 \sqrt{2000 - 1.96 \times 11.46})/12.17 = .70
\]
\[
\text{power} = \text{NormalCDF}(.70) = .76
\]

Power with \( p_C = .04 \) and \( p_I = .02 \)

Risk Difference
\[
\Delta_1 = .04 - .02 = .02,
\]
\[
p = (.04 + .02)/2 = .03
\]
\[
se_{1Null} = \sqrt{2 (\cdot03) (1 - .03)} = .24
\]
\[
se_{1Alt} = \sqrt{.04 (1-.04) + .02 (1-.02)} = .24
\]
\[ z = \left( \frac{.02}{\sqrt{2000}} - 1.96 \times .26 \right) / .26 = 1.75 \]

\[ \text{power} = \text{NormalCDF}(1.75) = .96 \]

Relative risk
\[ \Delta_2 = \log(4/2) = .69, \]
\[ p = (.04 + .02)/2 = .03 \]
\[ se_{2\text{Null}} = \sqrt{2 \times \left(1 - .03\right)/.03} = 8.04 \]
\[ se_{2\text{Alt}} = \sqrt{0.04 \times .04 + (1 - .02)/.02} = 8.54 \]
\[ z = \frac{.69 \sqrt{2000} - 1.96 \times 8.04}{8.54} = 1.78 \]
\[ \text{power} = \text{NormalCDF}(1.78) = .96 \]

**Power with** \( p_C = .04 \text{ and } p_I = .03 \)

Risk Difference
\[ \Delta_1 = .04 - .03 = .01, \]
\[ p = (.04 + .03)/2 = .035 \]
\[ se_{1\text{Null}} = \sqrt{2 \times (.035) \times (1 - .035)} = .26 \]
\[ se_{1\text{Alt}} = \sqrt{0.04 \times (1 - .04) + .03 \times (1 - .03)} = .26 \]
\[ z = \frac{.01 \sqrt{2000} - 1.96 \times .26}{.26} = -.2394 \]
\[ \text{power} = \text{NormalCDF}(-.2394) = .41 \]

Relative risk
\[ \Delta_2 = \log(4/3) = .288, \]
\[ p = (.04 + .03)/2 = .035 \]
\[ se_{2\text{Null}} = \sqrt{2 \times (1 - .035)/.035} = 7.42 \]
\[ se_{2\text{Alt}} = \sqrt{0.04 \times .04 + (1 - .03)/.03} = 7.51 \]
\[ z = \frac{.288 \sqrt{2000} - 1.96 \times 7.42}{7.51} = -.225 \]
\[ \text{power} = \text{NormalCDF}(-.225) = .42 \]