

Find the value of the series solution:

$$\frac{1}{\sqrt{1} + \sqrt{2}} = \frac{1}{(\sqrt{1} + \sqrt{2})} \frac{(\sqrt{2} - \sqrt{1})}{(\sqrt{2} - \sqrt{1})} = \sqrt{2} - \sqrt{1}. \text{ So the series is}$$

$$(\sqrt{2} - \sqrt{1}) + (\sqrt{3} - \sqrt{2}) + (\sqrt{4} - \sqrt{3}) + \dots + (\sqrt{2012} - \sqrt{2011}) \text{ After cancelling this reduces to}$$
$$\sqrt{2012} - 1$$