John is trying to figure out how much money he'll need when he retires. If he retires at the age of 65, he can expect to live 20 more years.

How much must John have saved up by Age 65 in order to have a retirement income of $50,000 the first year **with increases of 2.5% per year after that?**

Assume John's retirement funds are invested in stock and bond mutual funds **earning a market rate of 6% per year**.