CALCULATE: Play the Lottery or Save?

In an Investopedia article entitled Is the Lottery Ever Worth Your Money? author Tim Parker writes the following:

> A curious headline was placed on the homepage of the Mega Millions website on March 25, 2011 on a day when the odds of winning had gone up to 1 in 175 million.... The headline read, "Save for Retirement." Anti-gambling groups cried foul at this apparent attempt to spin the lottery as a means to fund a person's retirement and lottery officials quickly issued a statement saying that they were running a campaign that was encouraging people to dream about how they would use their winnings if they won.
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> With this in mind, is there a way to use the lottery as a retirement vehicle? Yes! One study in Texas found that a person without a college degree spent an average of $250 per year purchasing lottery tickets. If that same person were to start an IRA or other retirement vehicle that earned a conservative average 4% annual return and they contributed $250 per year for 30 years...

Part I: Calculate Compound Interest

1. In this study concerning Texans without college degrees who spend an average of $250 per year on the lottery, how much would he or she spend playing the lottery over the course of 30 years?

2. How much money is he or she *likely* to win playing the lottery for that amount of time? Remember, the odds of winning the lottery are 125 million to 1.

3. Now, use this Compound Interest Calculator from moneychimp.com to work through the scenario Tim Parker proposes above, where the Texan instead invests that money in an IRA. Note that "Current Principal" means the initial amount of money the investor is starting with, which in this case is $0. How much money would the Texan who normally spends $250 a year on lottery tickets have at the end of 30 years if they put the money yearly in an IRA instead?

4. Which seems like a better investment -- investing in an IRA or playing the lottery? Why do you feel this way?

Part II: Expand your earnings

5. Let's say the Texan decides to invest in an IRA yearly instead of playing the lottery. What are some ways that he or she could increase the total amount of money available at retirement?

6. Complete the questions below, using the same Compound Interest Calculator for a variety of scenarios:
   a. How much would the Texan have at retirement if they invested the same $250 at 4% from ages 22 to 67?
   b. How much would the Texan earn if they invested just a little more -- $300 per year for 30 years?
   c. How much would the Texan earn if they invested the original $250 per year for 30 years and it earned 5% instead of 4%?

7. Answer the following questions:
   a. When thinking about retirement investments, what is the impact of investing the same amount of money for a LONGER amount of time?
   b. When thinking about retirement investments, what is the impact of investing a slightly LARGER amount of money?
   c. When thinking about retirement investments, what is the impact of earning a HIGHER interest rate?

8. Design a scenario in which the average Texan without a college degree ends up with $50,000 or more saved for retirement by investing in an IRA. What terms create this scenario?

9. Is there a way the average Texan could have $200,000 or more saved for retirement by investing in an IRA? What terms create this scenario?

10. What steps might the Texan need to do in his or her life to make $50,000 or $200,000 or more a reality for their retirement?