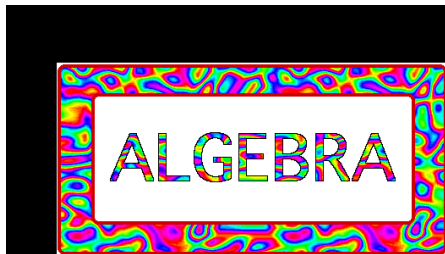


Joan saved early for the first 10 years and then vacationed for the remaining 34 years. Which formulas must be used to calculate her total savings plus interest?

- a) lump
- b) periodic payment
- c) both of the above
- d) other



[http://www.youthink.com/images\\_quiz/2008/07/01/100\\_734404393.jpg](http://www.youthink.com/images_quiz/2008/07/01/100_734404393.jpg)

What is the equation that represents the total savings plus interest when \$100 is deposited into an account each month for 4 years at 3% compounded monthly?

a)  $100(1 + .03)^4$

b)  $100(1 + \frac{.03}{12})^4$

c)  $100(1 + \frac{.03}{12})^{4 \times 12}$

d)  $\frac{100((1 + \frac{.03}{12})^{4 \times 12})}{\frac{.03}{12}}$

e)  $\frac{100((1 + \frac{.03}{12})^{4 \times 12} - 1)}{\frac{.03}{12}}$

What is the equation that represents the total savings plus interest when \$100 is deposited into an account each month for 4 years at 3% compounded monthly?

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What is the total interest earned, in dollars and cents, in the last question?

What is the equation that represents the total savings plus interest when \$100 is deposited into an account each month for 4 years at 3% compounded monthly?

a)  $100(1 + .03)^4$

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e)  $\frac{100((1 + \frac{.03}{12})^{4 \times 12} - 1)}{\frac{.03}{12}}$

What is the total interest earned, in dollars and cents, in the last question?

What is the total savings plus interest when \$100 is deposited today into an account that earns 3% compounded monthly for 4 years?

On September 29th, former employees of 3M must decide whether to take a lump-sum payout on their pension or take a monthly pension check in the future. The decision should not be taken lightly. Depending on which way the market winds blow and what assumptions you use, this could be a \$1 million decision.

[http://www.huffingtonpost.com/mike-branch-cfp/should-you-say-yes-to-you\\_b\\_5889992.html](http://www.huffingtonpost.com/mike-branch-cfp/should-you-say-yes-to-you_b_5889992.html)



## Choosing A Lump Sum Or Periodic Payments?

[www.thejacobsfinancialgroup.com/choosing-between-a-lump-sum-and-periodic-payments/](http://www.thejacobsfinancialgroup.com/choosing-between-a-lump-sum-and-periodic-payments/)



*America's Got Talent*: “The prize, which totals \$1,000,000, is payable in a financial annuity over forty years, or the contestant may choose to receive the present cash value of such annuity.”



<https://jborden.com/wp-content/uploads/2016/08/decisions.jpg>

## lottery decisions

A Powerball lottery from usatoday.com. said “For the jackpot worth 295 million, if there is one winner, then they will have a choice between 25 annual payments of 11.8 million each (Note that  $25 \times 11.8 = 295$ ) or a single lump sum payment of 170 million.” Let’s cut off the “million” to make it easier to work with (if you look at the formulas for lump sum and periodic payment, this is ok to do to adjust the units, since it is multiplication outside the parenthesis).

- For comparison sake, first set up the equation, with numbers filled in, that represents the total savings plus interest if we took the lump sum and leave the 170 in an account at 5% compounded annually for the 25 years. The rate of 5% is close to the rate that the lottery used when determining the lump sum amount as \$170 million.
- Solve for the total (in millions)
- What is the interest (in millions)? Show work.

## lottery decisions

- Set up the equation that represents the total savings plus interest, in millions, if we took the annual payment and deposit each 11.8 annual payment into the same type of account at 5% compounded annually for the 25 years.
- Solve for the total (in millions)
- What is the interest (in millions)? Show work.
- Which yields more money? Circle one: lump      periodic
- Which yields more interest? Circle one: lump      periodic



- Search for recent news on: **lottery winner lump** and report back, giving a source.
- As time allows, read the article that is accessible from our (optional) tentative calendar with in-class activities at the top of ASULearn, and write down an item you found interesting, disagreed with, or had a question on

**BUSINESS**

## What Becomes of Lottery Winners?

Millions are buying Powerball tickets assuming that winning will bring them a prosperous, work-free life, but research suggests they shouldn't be so certain.

BOURREE LAM JAN 12, 2016



STEPHANIE KEITH / REUTERS

<https://www.theatlantic.com/business/archive/2016/01/lottery-winners-research/>



Decisions, decisions: Which lottery payout option would you select?

- a) lump sum option
- b) periodic payment option
- c) neither—I would refuse the winnings



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