

lump & periodic think-pair-share
Dr. Sarah's MAT 1010: Introduction to Mathematics

Part A: Answer all nine questions below and type your responses for the forum. Add a new discussion topic with the subject as your preferred name and the post as your responses and any questions you have.

Part B: Respond separately to at least two of your classmates postings in a meaningful way. Use their preferred name (like Dr. Sarah is mine), with something new that justifies your position on (at least) one of the questions. Don't just say, "Yeah, I agree." Instead, say, "Yes preferred name, but we also need to consider..." Or, "Preferred name, I don't agree because..." You might also pose questions, answer questions, extend ideas, or compare and contrast your responses and summarize what you chose and why. After the deadline, I'll respond to the shared posts within the successive days activities (in the next day or two) or within a class announcement.

1. 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

2. What is the total savings plus interest when \$25 is deposited into an account every month for 8 months at 1% compounded monthly?
 - a) $25(1 + \frac{.01}{12})^{8 \times 12}$
 - b) $\frac{25((1 + \frac{.01}{12})^{8 \times 12} - 1)}{\frac{.01}{12}}$
 - c) $\frac{25((1 + \frac{.01}{8})^8 - 1)}{\frac{.01}{8}}$
 - d) $\frac{25((1 + \frac{.01}{12})^8 - 1)}{\frac{.01}{12}}$
 - e) none of the above

3. For each of the other choices in #2 a, b, c, d (that you did not select), write a scenario that represents it. So your response will be three or four different scenarios.

4. What algebraic operations did we use to derive the periodic payment/annuity formula?
 - a) multiplication, distribute, factor
 - b) rule for powers—add the exponents

more on next page

- c) subtraction
- d) all of the above

5. For the lottery, what would you take?

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

6. Explain why you chose what you did in your last response.

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

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

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