Answer on Question #56019 – Math – Algebra

8. If you save one penny on January 1, two pennies on January 2, three pennies on January 3, and continue this pattern for one year (not a leap year), what will be the value of your entire savings, in dollars at the end of that one year? Express your answer as a decimal.

Solution. We have arithmetic progression with N=365. Sum is $S = \frac{a_1+a_N}{2}N = \frac{1+365}{2} * 365 = 66795$ pennies.

Answer: $ 667.95.

9. If you were to solve the following system of equations by using a matrix, which of the following would be your coefficient matrix?

5x – y = 18

3x + 8y =15

A: [5 18]

[3 15]

B: [5 -1 18]

[3 8 15]

C: [5 -1]

[3 8]

D: [5 3]

[-1 8]

Answer: C: $\begin{pmatrix} 5 & -1 \\ 3 & 8 \end{pmatrix}$

10. It is possible for a system of linear equations to have an infinite number of solutions

A: True

B: False

Solution. It is possible, example: $\begin{cases} x + y + 1 = 0 \\ 2x + 2y + 2 = 0 \end{cases}$

Answer: A: True