Do Now

1) Write an explicit formula for this sequence: {4, 14, 24, 34,.....}

$$a_1 = 4$$
 $a_n = 4 + 10(n-1)$
 $d = 10$ $a_n = 4 + 10n - 10$

2) Then find a_{14} $a_{14} = 10n - 6$

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Homework Answers

1)
$$A_n = -15(3)^{n-1}$$

$$A_9 = -98415$$

2)
$$A_n = 96 \left(\frac{1}{2}\right)^{n-1}$$

$$A_8 = \frac{3}{4}$$

3) a.
$$A_n = 10n - 6$$

b.
$$A_6 = 54$$

4) a.
$$A_n = 2n + 3$$

b.
$$A_{11} = 25$$

5)
$$A_n = 2(-4)^{n-1}$$

$$A_{9} = -362768$$

6)a.
$$A_1 = 4$$

b.
$$A_n = 4(-2)^{n-1}$$

7) a.
$$A_1 = 4$$

b.
$$A_n = 4(3)^{n-1}$$

8)
$$A_n = -10n + 29$$

$$A_{20} = -171$$

9)
$$A_n = 4n - 1$$

$$A_{37} = 147$$

Sequence Word Problems

Procedure to solve word problems with sequences:

- 1) Identify if it is arithmetic or geometric
- 2) Find the first value to be used in the sequence
- 3) Find the common difference/ratio
- 4) Use the appropriate formula
- 5) Determine which "n" value you are looking for and calculate to find it (be careful of time units)

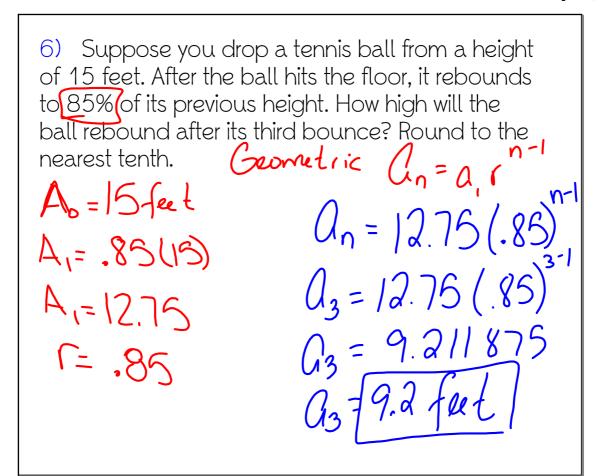
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1) There is a stack of logs in the backyard. There are 15 logs in the 1st layer, 14 logs in the 2nd layer, 13 logs in the 3rd layer and so on with the last layer having one log. How many logs are in the 10th layer?

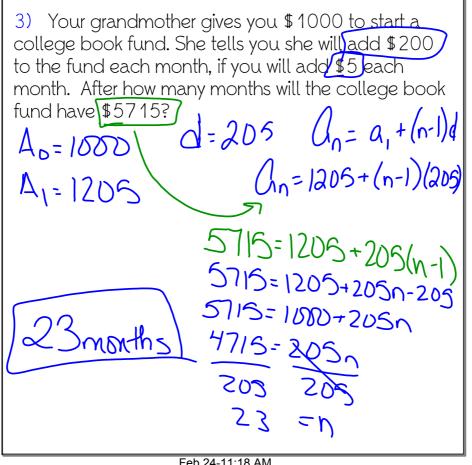
15, 14, 13,... Arthmetic

$$a_1 \ a_2 \ a_3$$
 $A_n = 15 + (n-1)(-1)$
 $A_n = 15 + (n-1)(-1)$
 $A_{10} = 15 + (q)(-1)$
 $A_{10} = 16 - q$
 $A_{10} = 6$

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