**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Given the arithmetic (linear) sequence, write the explicit formula then find the 32nd term.

1. 3, 7, 11, 15, 19, 23, … 2. 110, 103, 96, 89, 82, 75, …

Write the first 5 terms for the following sequeces:

1. 
2. 
3. 
4. 

Write the a recursive formula and an explicit formula for each of thefollowing sequences:

1. 

Recursive Formula:



Explicit Formula:



1. 

Recursive Formula:



Explicit Formula:



1. Your phone service allows you to add international long distance to your phone. The cost is a $10 flat fee each month and 15¢ a minute for calls made.
   * 1. Write a recursive rule describing your monthly cost for international calls.
     2. Write an explicit rule for the ***n*** minutes of calls made in a month.
     3. How much would it cost you to talk for 35 minutes?
     4. If you have AT MOST $250 to spend on long distance phone calls, how many minutes can you spend talking on the phone?
2. Your local cable company offers 2 different combination plans for cable, internet, and phone services.

**Plan A** - You pay $59 per month for cable service plus high speed internet. Premium channels are available for a surcharge of $5.00 per channel.

**Plan B** - You pay $89 per month for cable, internet, and phone. Premium channels are available for $3.75 per channel.

1. Fill in the table for the cost of each plan:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Plan A | |  | Plan B | |
| # premium channels | cost |  | # premium channels | cost |
| 0 |  |  | 0 |  |
| 1 |  |  | 1 |  |
| 2 |  |  | 2 |  |
| 3 |  |  | 3 |  |
| 4 |  |  | 4 |  |
| 5 |  |  | 5 |  |

|  |  |
| --- | --- |
| 1. Write the recursive rule for each plan. | |
| **Plan A** | **Plan B** |
| Write the explicit rule for each plan: | |
| **Plan A** | **Plan B** |
| 1. Find the cost of 18 premium channels on Plan B. | 1. Find the number of premium channels bought where the 2 plans would have the same cost. |