

## 11.7 Modeling with sequences

When modeling situations with sequences.

Step 1: determine if it is \_\_\_\_\_

Step 2: Identify the \_\_\_\_\_

Step 3: Write the \_\_\_\_\_ Sequence

\*\*REMEMBER Arithmetic \_\_\_\_\_

Geometric \_\_\_\_\_

Use these steps to solve the following:

1. Jasmine is renting space for her birthday party. The charge for the room is \$50 for the night and \$5 for each guest that attends the party.
  - a) Write a formula for the amount of money Jasmine will have to pay for  $n$  guests.
  - b) How much will it cost Jasmine to invite 20 friends to the party?
  - c) Jasmine's budget for renting the space is \$125. What is the maximum number of guests she can invite?
2. The library charges a late fee of \$1 when a book is returned a day late and an additional \$0.05 for each extra day the book is overdue.
  - a) Write a formula for the amount of money it will cost to have an overdue book for  $n$  days.
  - b) How much is the fee for a book that is late by 8 days? 12 days? 20 days?