Exponential

1-3. The average rent of a 1-bedroom apartment in a major city is said to be $575. Experts predict the rent cost will increase 7.5% each year for the foreseeable future.

   a) State an equation that models the situation.
   b) What will the rent for a 1-bedroom apartment be in 10 years?
   c) A man is paying a $4500 monthly mortgage on an apartment complex with 10 1-bedroom units, each renting for $575 monthly. After how many years will he be making a profit of $4000/month on his apartments?

1-5. A scientist has 100 mg of iodine-131 which has a half-life of 8 days.

   a) State an equation that models the situation.
   b) Graph the amount of iodine-131 remaining after each of the first five
   half-lives.
   c) When will the scientist have less than 1 mg of iodine-131 remaining?

Design and measure

Philippa wants to cover her dining room floor with linoleum. The floor measures 14 ft. × 12 ft.

The linoleum costs $13.99 per square yard and must be purchased in whole units.

What will be the total cost for the flooring, including taxes?

(Note: GST = 5%, PST = 8%)

A spherical balloon has a diameter of 30 cm. Air is added to the balloon until its surface area increases by 500 cm^2. What is the new diameter?