

Name \_\_\_\_\_

# 7-3A Lesson Master

## Questions on SPUR Objectives

See pages 452–455 for objectives.

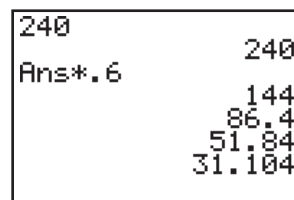
### USES Objective E

- In 2006, a particular car cost \$21,725. Suppose its value depreciates 8% each year.
  - What will the value of the car be in 2007? \_\_\_\_\_
  - Write a formula that gives the value of the car  $t$  years from when it was purchased. \_\_\_\_\_
  - How much will the 2006 car be worth in 2012? \_\_\_\_\_
  - In what year will the 2006 car be worth less than \$10,000? \_\_\_\_\_

- Multiple Choice.* Which equation represents a starting amount depreciating at a rate of 13% each year?
 

A  $y = b(1.13)^t$     B  $y = b(0.13)^t$     C  $y = b(0.87)^t$     D  $y = b(1.87)^t$

- Write an equation in the form  $y = b \cdot g^x$  to describe the numbers in the calculator display at the right.



### REPRESENTATIONS Objectives G and H

- A biologist is studying how a new medicine affects the number of antibodies a patient has to fight disease. The number may grow at a constant rate or exponentially. The biologist looks at how 100 antibodies might increase in two cases.
 

Case 1: There are 30 more each day.  
Case 2: There are 20% more each day.  
Let  $x$  = the number of days.

Day	Increase by 30	Increase by 20%
0	100	100
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

- Write an expression for the number of antibodies if there are 30 added each day.  
\_\_\_\_\_
- Write an expression for the number of antibodies if they are increasing exponentially by 20% each day. \_\_\_\_\_
- Fill in the chart above. Round to the nearest integer.
- Which case gives more antibodies after 4 days? \_\_\_\_\_
- Which gives more antibodies after 10 days? \_\_\_\_\_