

Name _____

7-3B Lesson Master

Questions on SPUR Objectives
See pages 452–455 for objectives.

USES Objective E

In 1-4, use the table to answer the questions.

The following table represents the answers given by an online car-depreciation calculator.

A	B	C
Age of Car	Value of Car	Depreciation Rate
0	22,000	n/a
1	15,000	
2	13,050	
3	11,354	
4	9,878	

1. Calculate cells C1, C2, C3, and C4 of the table.
2. Use the pattern to write the formula for the value of the car t years after its first “birthday.”
3. By this pattern, how much will the car be worth when it is 8 years old? Round to the nearest dollar.
4. By this pattern, at what age will the car be worth less than \$4,000?
5. *Multiple Choice.* Which equation represents a starting amount b depreciating at a rate of 40% each year?

A $y = b(1.60)^t$

B $y = b(1.4)^t$

C $y = b(0.6)^t$

D $y = b(0.40)^t$

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

572	572
Ans*.84	
	480.48
	403.6032
	339.026688
	284.7824179

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REPRESENTATIONS Objectives G and H

In 7-9, consider the following situation.

Jerome wants to pay his daughter for working at his video store. To start, he pays her \$5 each week. He can increase that amount in two different ways.

Case 1: \$15 more each week.

Case 2: 50% more each week.

Let x = the number of weeks.

7. Write an expression for the salary for week x if she is paid \$15 more each week. _____

8. Write an expression for the total salary for week x if the amount is increasing exponentially by 50% each week. _____

9. a. Fill in the chart. Round to the nearest dollar.

Week	Case 1: \$15 more	Case 2: 50% more
0	5	5
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

b. Which case gives more money after 5 weeks? _____

c. Which case gives more money after 8 weeks? _____

d. Sketch a graph for the information in the chart.

