Name _____

9-4B Lesson Master

Questions on SPUR Objectives
See Student Edition pages 656–659 for objectives.

USES Objective H

Multiple Choice In questions 1 and 2 choose the set of data in each
question that is the most appropriate exponential model. Explain why.

1. A   _____

x	0	1	2	3	4	5
y	5	40	320	2560	20,480	163,840

B

x	0	1	2	3	4	5
y	5	20	800	4000	20,000	120,000

C

x	0	1	2	3	4	5
y	5	15	60	300	1800	12,600

2. A   _____

x	0	1	2	3	4	5	6
y	3	18	75	390	1800	10,000	50,000

B

x	0	1	2	3	4	5	6
y	3	15	75	375	1875	9375	46,875

C

x	0	1	2	3	4	5	6
y	3	6	99	732	3075	9378	23,331

3. An experiment began with 200 of a certain type of bacteria. The
bacteria grew exponentially, and 4 hours later there were 18,000.

a. Fit an exponential model to these data.   _____
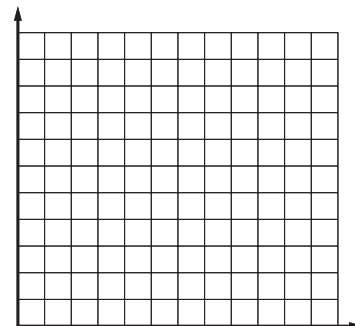
b. After 12 hours, how many bacteria will be present?   _____

Name

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4. In a horticultural experiment, the monthly growth of a plant was monitored. The results of the experiment are in the table below.

Month	1	2	3	4	5	6
Growth (cm)	5.2	4.2	3.5	2.7	2.2	1.8

a. Draw a scatterplot of these data at the right.
b. Let G be the amount of growth and m the number of months. Fit an exponential model to these data.

_____

5. The table at the right gives the population in Kuever County for the years 1870 through 1950.

a. For which years is it appropriate to fit the data to an exponential model? Explain your reasoning.

_____

_____

_____

_____

Year	Population	Decade Growth Factor
1870	8320	
1880	11,823	1.421
1890	16,848	1.425
1900	24,042	1.427
1910	34,188	1.422
1920	48,923	1.431
1930	69,666	1.424
1940	76,911	1.104
1950	98,831	1.285

b. Calculate the annual growth factor between 1890 and 1900.

_____

c. Find an exponential model for the population of Kuever County for the years between 1890 and 1900.

_____

6. Under certain conditions, algae will grow exponentially in a pond. Suppose that there are 100 algae in a pond and that 3 hours later there are 200 algae.

a. Fit an exponential model to these data.

_____

b. Find the number of algae present after 24 hours.

_____