

Name _____

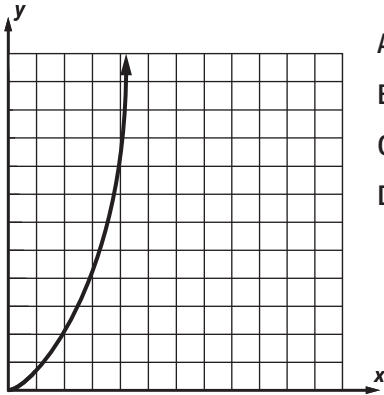
2-7B Lesson Master

Questions on SPUR Objectives
See Student Edition pages 143–147 for objectives.

USES Objective H

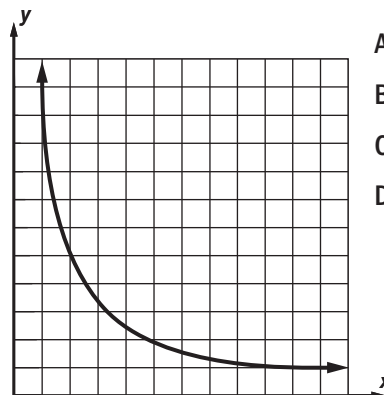
Multiple Choice In 1 and 2, Tell which equation is the best model for the graph shown below each question.

1. _____



- A $y = kx$
- B $y = kx^2$
- C $y = \frac{k}{x}$
- D $y = \frac{k}{x^2}$

2. _____



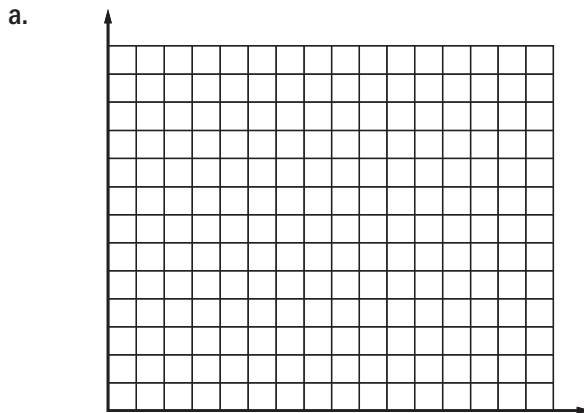
- A $y = kx$
- B $y = kx^2$
- C $y = \frac{k}{x}$
- D $y = \frac{k}{x^2}$

In 3–5, a. Draw a graph to represent the situation, b. write a general variation equation for the situation, c. find the value of the constant of variation and rewrite the variation equation, and d. answer the question in the problem.

3. The amount of force needed to loosen a certain bolt is related to the length of a wrench as given in the table below.

| | | | | | |
|------------------------|-----|-----|-----|-----|----|
| Force Needed (lb) | 3 | 7 | 10 | 15 | 30 |
| Length of Wrench (in.) | 630 | 270 | 189 | 126 | 63 |

How many pounds of force would be needed to loosen the same bolt with a 21-inch wrench?



- b. _____
- c. _____
- d. _____

Name _____

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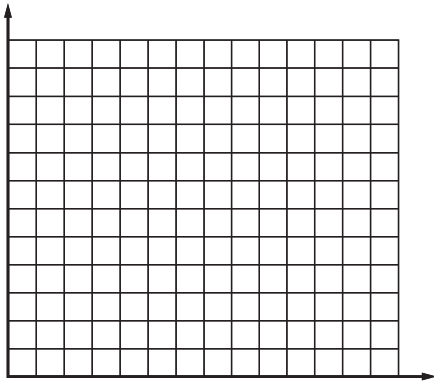
page 2

4. While studying gears, a physics class collected the data in the table below relating the number of teeth in a gear to the speed of the gear in revolutions per minute.

| | | | | | |
|-----------------|-----|----|----|----|----|
| Number of Teeth | 10 | 12 | 18 | 24 | 36 |
| Speed (rpm) | 108 | 90 | 60 | 45 | 30 |

What would be the speed of a gear with 30 teeth?

a.



b. _____

c. _____

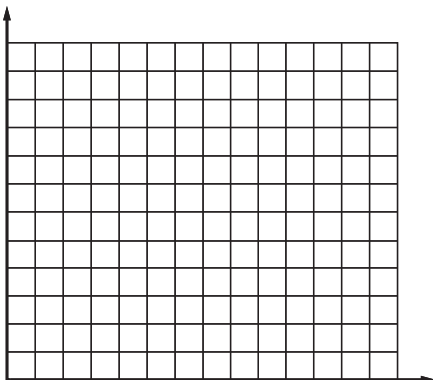
d. _____

5. The table below gives the number of square tiles of various sizes needed to cover the floor of a small restaurant kitchen.

| | | | | |
|---------------------------|------|-----|-----|-----|
| Length of Tile Side (in.) | 4 | 6 | 9 | 12 |
| Number of Tiles | 1944 | 864 | 384 | 216 |

How many square tiles with 8-in. sides would be needed?

a.



b. _____

c. _____

d. _____