Name

2-8B Lesson Master

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

PROPERTIES Objective D

1. Consider the data at the right.

m	1	2	3	4	5	6
n	5	40	135	320	625	1080

   a. What is the effect on n if m is doubled? _____

   b. What is the effect on n if m is tripled? _____

   c. **Fill in the Blanks** n varies _____ with the _____ power of m.

2. Consider the data at the right.

P	5	10	15	20	25	30
Q	144	36	16	9	5.76	4

   a. What is the effect on Q if P is doubled? _____

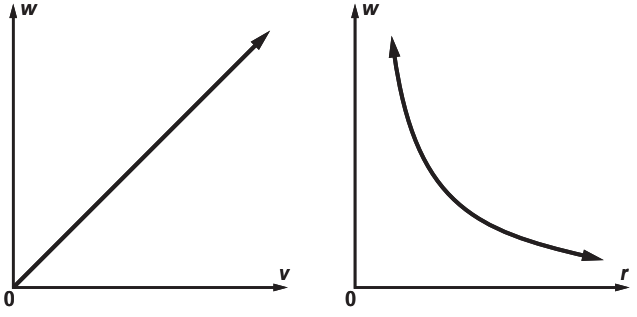
   b. What is the effect on Q if P is tripled? _____

   c. **Fill in the Blanks** Q varies _____ with the _____ power of P.

USES Objective H

Multiple Choice In 3 and 4, select the equation that could model the relationship shown in the graphs.

3. _____



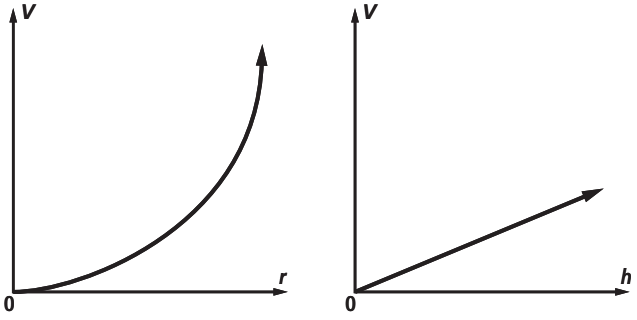
A $w = \frac{kr}{v}$

B $w = \frac{kv}{r}$

C $w = kvr^2$

D $w = kv^2r$

4. _____



A $V = \frac{kh}{r^2}$

B $V = krh^2$

C $V = krh$

D $V = kr^2h$

Name

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5. The Transportation Department studied the length of time traffic was halted as freight trains traveled across a road. The data in Table I at the right relate speed S of a 100-car train to time T. The data in Table II at the right relate length L, of a train traveling at 40 mi/hr to time T.

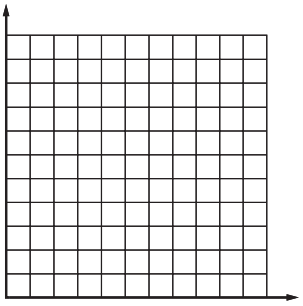
I.

Speed S (mi/hr)	20	30	40	50	60
Time T (min)	10	7	5	4	3

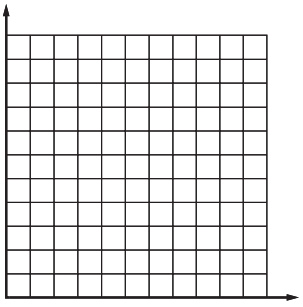
II.

Length L (in cars)	20	40	60	80	100
Time T (min)	1	2	3	4	5

a. Graph the points from Table I below.



b. Graph the points from Table II below.



c. In Part a, how does T vary with S?

d. In Part b, how does T vary with L?

e. Write an equation relating T, S, and L. Do *not* find the constant of variation.

6. A packaging specialist for a toy company compiled the following data. Table I at the right gives data for the number of racquetballs r that fit in cylindrical cans 30 cm in diameter, and h cm high. Table II at the right gives data for the number of racquetballs r that fit in cans 48 cm high with diameter d.

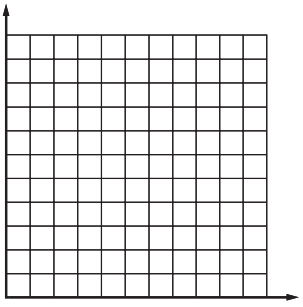
I.

h (cm)	30	36	48	60	84
r	100	120	160	200	280

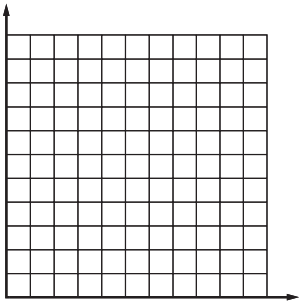
II.

d (cm)	30	35	40	45	50
r	160	210	270	340	425

a. Graph the points from Table I.



b. Graph the points from Table II



c. In Part a, how does r vary with h?

d. In Part b, how does r vary with d?

e. Write an equation relating r, h, and d. Do *not* find the constant of variation.