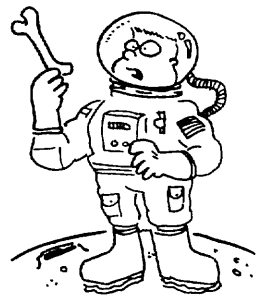
What Did Scientists Conclude After Discovering Bones on the Moon?



Choose the correct answer for each exercise and circle the letter pair next to it. Write the upper case letter in the box containing the lower case letter.

1 During the big storm, 29 in. of snow fell in 8 hours. Find the rate of snowfall in inches per hour.

p • U 3.8 in./h **k • D** 3.6 in./h

2 A gas pump delivered 19.2 gal of gas in 3.5 min. Find the pumping rate in gallons per minute.

c • E 5.49 gal/min **f • V** 6.08 gal/min

3 A boat propeller spins 1044 times in 3 min. Find the rate in revolutions per second.

u • T 5.8 rps **b • G** 4.7 rps

4 Smallville is shaped like a rectangle 8 mi long and 5 mi wide. The town has a population of 72,450. Find the population per square mile.

r • M 1755 per mi^2 **p • A** 1811 per mi^2

5 Mr. Snorkel drove 169 miles in 3 h 30 min. Find these rates:

a. miles per hour

q • V 47.6 mph **j • I** 48.3 mph

b. miles per minute

h • C 0.7 mi/min **f • O** 0.8 mi/min

c. feet per minute *(1 mi = 5280 ft)*

m • T 4249 ft/min **t • S** 4325 ft/min

d. feet per second

n • Y 68.4 ft/s **b • H** 70.8 ft/s

e. minutes per mile

i • D 1.24 min/mi **q • B** 1.32 min/mi

6 Mom's Market charges $2.89 for a six-pack of cola. Each can holds 12 fl oz. Find these unit prices:

a. price per can

r • E $0.48 per can **d • N** $0.44 per can

b. price per fluid ounce

a • T $0.04 per oz **o • S** $0.07 per oz

7 Frosted Oats cereal is sold in three sizes. The 48-oz box costs $6.79. The 32-oz box costs $5.39. The 20-oz box costs $3.79. Find these unit prices:

a. price per ounce for the 48-oz box

l • O $0.16 per oz **q • K** $0.14 per oz

b. price per ounce for the 32-oz box

t • I $0.17 per oz **e • D** $0.15 per oz

c. price per ounce for the 20-oz box

s • F $0.22 per oz **g • W** $0.19 per oz

8 Matt the Magnificent performed three 24-minute magic shows each night for one week. He was paid $800. Find the following:

a. earnings per show

n • H $37.50 /show **l • N** $38.10 /show

b. earnings per minute of performing

h • L $1.64 /min **o • M** $1.59 /min

9 When he left on vacation, the odometer in Carl's car read 32,654 mi. When he returned, it read 33,895 mi. If he used 54.7 gal of gas, how many miles per gallon did he get?

e • C 22.7 mpg **d • R** 23.4 mpg

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u

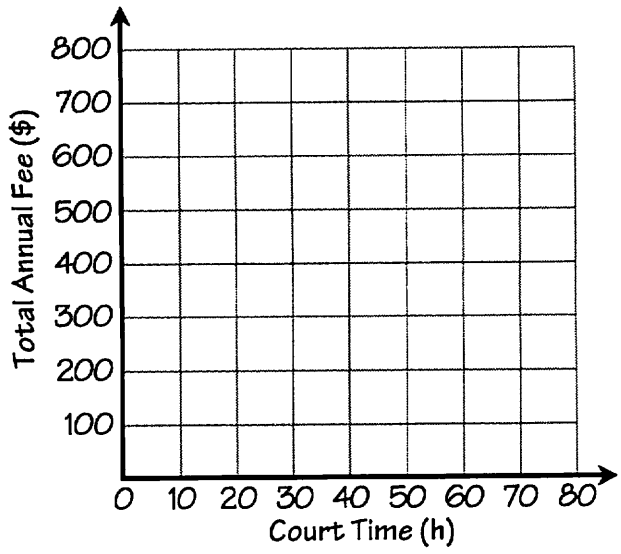
FUNction graFUN

For each situation, represent the same information in the form of (a) a table; (b) two graphs; and (c) two equations. Explain the significance of the point of intersection of the two graphs.

Tennis Clubs. The Ace Tennis Club charges annual dues of $200, plus $7 per hour to use a court. The Love Tennis Club charges annual dues of $300, plus $5 per hour to use a court. Show how each club's total annual fee is a function of the number of hours a court is used.

Equations:

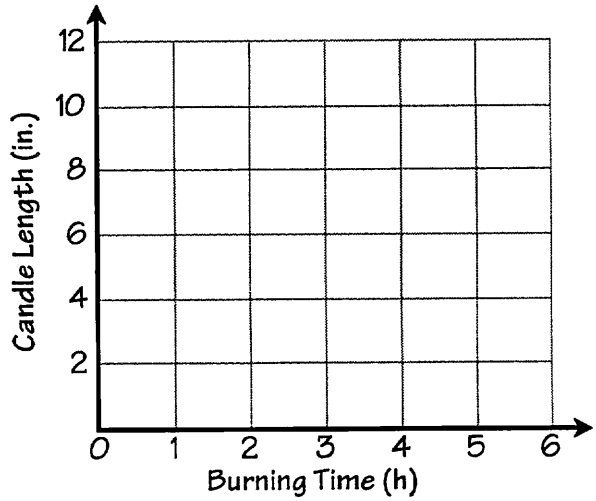
Court Time (h)	Annual Fee ($)	
	Ace	Love
0		
10		
20		
30		
40		
50		
60		
70		
80		



Candles. Janis lights two candles at the same time. The red candle is 12 in. long and burns at the rate of 2.5 in./h. The blue candle is 9 in. long and burns at the rate of 1.5 in./h. Show how each candle's length is a function of the number of hours the candle has burned.

Equations:

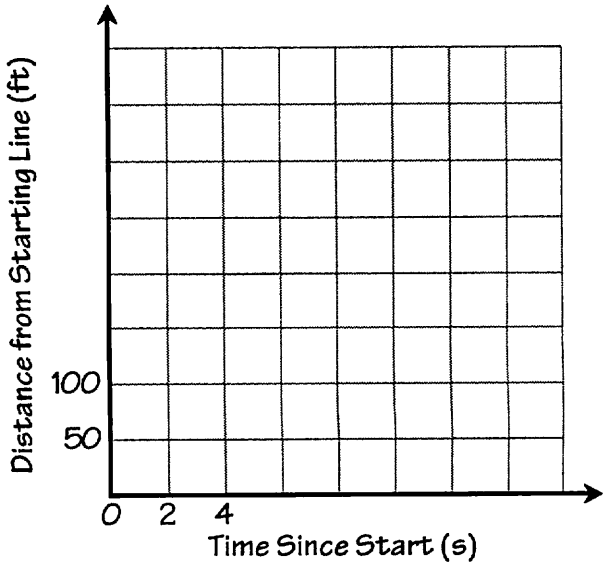
Time (h)	Length (in.)	
	Red	Blue
0		
1		
2		
3		
4		
5		
6		



Wild Animal Race. The zebra and the hippo had a race. The zebra gave the hippo a 100-ft head start. The zebra ran at an average speed of 22 ft/s while the hippo ran at an average speed of 15 ft/s. Show how the distance of each animal from the starting line is a function of the time since the race started.

Equations:

Time (s)	Distance (ft)	
	Hippo	Zebra
0		
2		
4		
6		
8		
10		
12		
14		
16		



Books Never Written

- *World's Most Fun Algebra Problems* by

5.6	67.5	10.5	10.5	6.9	2.5	4.4	15.8	4.4	13.3	140	140	$\frac{ac}{b}$	140	4.9	$\frac{ab}{c}$	2.5

- *Your Dad at the Beach - First Aid Tips* by

75.4	17.0	70	10.5	13.3	6.1	3.7	20.4	67.5	70	2.5	35.2	12	2.8	17.0	26.7	6.1	70

Find each solution in the code. Each time it appears, write the letter of the exercise above it.

Solve the proportion. Round to the nearest tenth.

H $\frac{4}{7} = \frac{n}{12}$ **A** $\frac{x}{9} = \frac{15}{2}$ **N** $\frac{8}{a} = \frac{30}{23}$ **Y** $\frac{5}{16} = \frac{11}{y}$

O $\frac{2.5}{9.2} = \frac{k}{18}$ **E** $\frac{20}{8.7} = \frac{5.8}{m}$ **U** $\frac{29}{u} = \frac{75}{44}$ **C** $\frac{b}{0.6} = \frac{17}{0.5}$

I $\frac{100}{62.5} = \frac{t}{8.3}$ **M** $\frac{v}{7.5} = \frac{7.5}{10}$ **B** $\frac{9.47}{p} = \frac{3.33}{1}$ **J** $\frac{1}{3.14} = \frac{24}{q}$

Write the sentence as a proportion. Then solve for *x*.

W x is to 8 as 5 is to 9 **R** 4 is to 3 as x is to 20 **V** x is to a as b is to c

Solve mentally.

A color called Passion Pink is made by mixing red paint and white paint in a ratio of 2 to 7. How many drops of white paint do you need:

S If you use 20 drops of red paint?

L If you use 40 drops of red paint?

T If you use 3 drops of red paint?

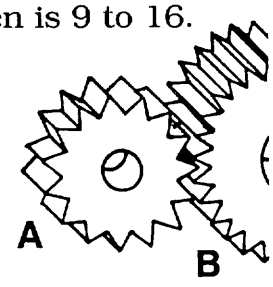
What Did the Detectives Say to the Crook?

Solve each problem and find your solution in the answer column. Note the two letters next to it. Write these letters in the two boxes above the exercise number at the bottom of the page.

1 To make his special salad dressing, Wolfgang combines 7 fl oz of oil with 4 fl oz of vinegar. One day he needed a larger amount, so he used 8 fl oz of oil. How much vinegar did he need?

2 The ratio of height to width for a TV screen is 9 to 16. How high is a screen that is 30 in. wide?

3 GEAR RATIO. The ratio of the number of teeth on Gear A to the number of teeth on Gear B is 5 to 12. How many teeth are on Gear B?
(Hint: Count the teeth on Gear A.)



4 Jessica checked her gas mileage and found that she had used 17.4 gal of gas to travel 392 mi. At this rate, how many gallons will she use to travel from Los Angeles to Miami, a distance of 2,735 mi?

5 If there are 95 g of fat in 16 oz of ground beef, how much fat is in 3 oz of ground beef?

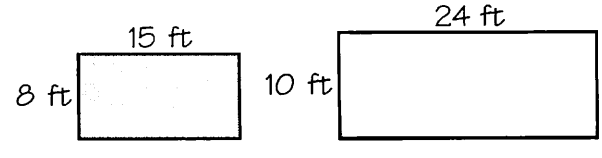
6 A locomotive is 56 ft long and 11 ft wide. A special effects designer makes a model that is 18 in. long. How wide should it be?

7 The Screaming Equals' team color is made by mixing red paint with blue paint in a ratio of 12 to 7. How much blue paint should be mixed with 4 gal of red?

8 A marathon runner ran the first 3 mi in 17.2 min. If she continues running at this pace, how long will it take her to run the entire marathon of 26.2 mi?

9 SOLAR SYSTEM MODEL. The sun has a diameter of 870,000 mi. The Earth has a diameter of 8,000 mi. If a 24-cm-diameter basketball is used as a model sun, what should be the diameter of the model Earth?

10 If it took 1.5 qt of paint to paint the wall on the left, how many quarts will be needed to paint the wall on the right?



answers

S T	153.4 min
W E	36
E S	4.9 in.
E T	2.3 gal
D R	18.3 g
O S	0.7 cm
O L	3 qt
I C	4.6 fl oz
T H	42
O M	121.4 gal
A N	2.5 gal
O U	3.5 in.
G O	5.2 fl oz
A R	150.2 min
T Y	16.9 in.
U N	2.8 qt
E P	17.8 g
E E	0.2 cm
L L	124.5 gal

3	8	5	10	1	7	4	9	2	6