

## Lesson 62 [47] Textbook

### Part 1

For each equation, tell what the slope equals.

a.  $y = \frac{4}{3}x$

b.  $y = \frac{3}{5}x$

c.  $y = 2x$

d.  $y = \frac{1}{9}x$

### Part 2

Solve each equation for  $y$ . Show the slope as a whole number or a simplified fraction.

$$\begin{array}{l} 6y = 5x \\ \left(\frac{1}{6}\right) 6y = 5x \left(\frac{1}{6}\right) \\ \boxed{y = \frac{5}{6}x} \end{array}$$

a.  $\frac{2}{3}y = 6x$

c.  $\frac{3}{4}y = \frac{1}{2}x$

b.  $2y = 5x$

d.  $\frac{3}{4}y = 3x$

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### Part 3

Write the letter equation for each question.

- How many plants per year did the nursery grow?
- How many windows per room were there in the hotel?
- How many apples per tree were there?
- How many seconds per question did the student need on the test?
- If the plane travels 1000 kilometers, how many kilometers per hour does the plane travel?

### Part 4

Solving for Rate

- There are 840 windows in 280 rooms of the hotel.

How many windows per room are there.

$$\begin{aligned}\frac{w}{r} &= \frac{w}{r} \\ \frac{w}{r} &= \frac{840}{280} & [S] \\ \frac{w}{r} &= 3\end{aligned}$$

3 windows per room

**Work each problem. Start with a simple letter equation for the rate unit.**

- A snail was observed for 3 hours. The snail traveled 57 inches in that time. How many inches per hour did the snail travel?
- A construction company received 8 loads of materials. The company was able to complete 12 jobs with those loads. How many jobs per load was the company able to complete?
- A computer processes 57,000 bits in 30 milliseconds. How many bits per millisecond does the computer process?
- It takes a train 4.2 hours to go 210 miles. On average, how many miles per hour does the train travel?

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### Part 5

Copy and work each problem.

a.  $1 = (4a - 10) \frac{1}{2}$

c.  $42 = (2q - 5) 6$

e.  $3(5m + 7) = 6$

b.  $(-2 + g) 5 = 25$

d.  $20 = 4(-9 + 2r)$

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### Part 6

Equations for Sentences that tell about Percents

- 75% of the boys were working.

$$\frac{75}{100} b = w$$

- 82% of the cars were dirty.

- The cost of the radio was 145% the cost of the calculator.

$$r = \frac{145}{100} c$$

Write a letter equation for each statement.

- His savings is 30% of his earnings.
- Tom's age is 140% of his sister's age.
- 80% of the sheep were in the barn.
- 6% of his earnings goes to charity.

### Part 7

Work each item.

- Al's height is 120% of his dad's height. Al is 78 inches tall. How tall is his dad?
- The cost of the dessert is 25% the cost of the main course. The main course is \$16. What's the cost of the dessert?
- 55% of the dogs have been fed. If 22 dogs have been fed, how many dogs are there in all?

### Part 8

Copy and complete each equation. Show an equivalent fraction that has only positive exponents.

a.  $\frac{m^4}{5^{-3} 6^2} = \square$

c.  $\frac{r^{-8} 9^2}{l^{-4} m^5} = \square$

b.  $\frac{4^{-5} v^{-4}}{6^7} = \square$

d.  $\frac{5^{-4} q^{-1}}{7^{-2}} = \square$

## Lesson 62 Independent Work

### Part 9

Copy and work each problem.

- a.  $10k - 20 - 200 = k + 40$       b.  $6p - 12 + 3p = 12 (4)$       c.  $5r - 6r + 27 + 3 (5) = r$

### Part 10

Work each item.

- a. The machine made nails at the rate of 6 nails every .2 second. How many nails would the machine make in 6 seconds?
- b. The cost of the shoes was  $\frac{7}{5}$  the cost of the book. The book cost \$45. What was the cost of the shoes?
- c. In the animal shelter there were 6 hamsters for every 5 weasels. There were 180 weasels. How many hamsters were there?
- d. In the field, there  $\frac{2}{3}$  as many crickets as daisies. There were 144 crickets. How many daisies were there?
- e. They mixed 7 bags of concrete for every 2 truckloads of gravel. They mixed 72 bags of concrete. How many truckloads of gravel did they use?
- f. The enlargement of the picture was 12 inches wide and nine inches high. The original was 4 inches wide. How high was the original?
- g. A room in Motel A costs  $\frac{5}{4}$  as much as a room in Motel B. Motel B charges \$90 per night. How much does Motel A charge?

### Part 11

Work each problem.

- a.  $\frac{.021}{.07} = \blacksquare$       b.  $.05 \overline{)5.405}$       c.  $3.4 \times 17.3 = \blacksquare$

### Part 12

Copy and work each problem.

- a.  $-\frac{4}{5} (10) + 2 (11) - 4 (2) = \blacksquare$       c.  $6 (5 + 1) + 4 (4) - 20 (4) = \blacksquare$
- b.  $9 (5) - 10 (3) + 5 (3) = \blacksquare$

## Lesson 62 Independent Work cont.

### Part 13

Solve each problem.

a.  $-\frac{2}{9}r - \frac{7}{9} = \frac{2}{5}b + 4$   $b = 10$

c.  $\frac{3}{5}t + 6 - 7 = 4 + 5$

b.  $-2k + 6k - 10 = 20 + 10$

### Part 14

Show the base with a positive exponent and a negative exponent.

a.  $\frac{3 \cdot 3 \cdot 3 \cdot 3 \cdot 3}{3 \cdot 3}$   =

c.  $\frac{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}{2 \cdot 2}$   =

b.  $\frac{1}{12 \cdot 12 \cdot 12}$   =

d.  $\frac{40 \cdot 40}{40 \cdot 40 \cdot 40}$   =

### Part 15

Write the equation for each line.

