

# 11

- I passed Lesson 10 pretest.  
Do pretest on page 39.  
*Extra Activity*, optional (1, 2, 3, 4, 5, 6, 7, 8, 9).
- I did not pass Lesson 10 pretest.  
Do all of Lesson 11.

Speed Drill 11

## Practice Set – Numbers

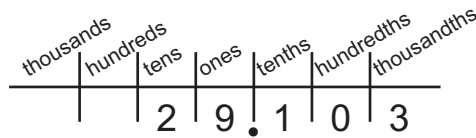
### Introduced in Math 502, Lessons 3 and 11

Each digit of a number has a place value. On either side of the ones column, the place values run in opposite directions.

We use **s** at the end of the whole number place values to the **left** of the decimal point.

We use **ths** at the end of the decimal place values to the **right** of the decimal point.

#### Place-value chart through thousandths



#### Place-value chart through trillions



Name the place value of each 8.

1. a. 4.185 \_\_\_\_\_ b. 9.238 \_\_\_\_\_
2. a. 578.639 \_\_\_\_\_ b. 5.814 \_\_\_\_\_

Write the digit that holds each place in the following number.

**298,731,364,501,240**

3. a. ten billions place \_\_\_\_\_ b. trillions place \_\_\_\_\_
4. a. hundred trillions place \_\_\_\_\_ b. ten trillions place \_\_\_\_\_
5. a. hundred billions place \_\_\_\_\_ b. billions place \_\_\_\_\_

## Introduced in Math 502, Lesson 7

Rules for writing decimals.

1. Write the part before the word *and* as you would any other whole number.
2. Write a decimal point for the word *and*.
3. Write the number after the *and*.
4. Add zeros when necessary to make the correct number of decimal places.

**Write these decimal numbers.**

- |   |                                   |
|---|-----------------------------------|
| 6. a. Nine and four hundredths _____            | b. Four and nine hundredths _____ |
| 7. a. Six hundred four thousandths _____        | b. Nine-tenths _____              |
| 8. a. Twenty-five and sixteen thousandths _____ | b. Fifteen thousandths _____      |
| 9. a. Two-tenths _____                          | b. Six hundredths _____           |

## Introduced in Math 502, Lesson 14

Rules for writing large numbers.

1. To write large numbers from words, change the words to numbers, writing a comma in place of every comma name.
2. If a comma name is skipped after the first comma name, you must write 3 zeros and a comma for that comma name.
3. Every group of digits must have 3 digits. If only one or two digits are named, add zeros for the missing digits.

**Write these numbers.**

10. Twenty-one billion \_\_\_\_\_
11. Four hundred eight trillion, eight hundred twenty-five million, forty-one  
\_\_\_\_\_
12. One trillion, seventy-two million, eight hundred thirty-four \_\_\_\_\_
13. Forty-five billion, two hundred sixty-eight thousand, six \_\_\_\_\_
14. Two trillion, two hundred eighty-three \_\_\_\_\_
15. Ten billion, five hundred ninety-two million, three hundred forty-five  
\_\_\_\_\_

## Lesson 11

### Introduced in Math 503, Lesson 8; Math 504, Lesson 13

To compare two decimals or to order decimals, it helps to annex zeros so that each number has the same number of decimal places.

Compare 9.726, 9.7, 9.35.

9.726	largest
9.700	middle
9.350	smallest

Order these decimal numbers from greatest to least.

16. 7.07   7.7   7.77   7   \_\_\_\_\_

17. 0.2   0.203   2.2   0.3   \_\_\_\_\_

Write  $<$ ,  $>$ , or  $=$ .

18. a.  $0.45$  \_\_\_\_\_  $0.398$     b.  $2.80$  \_\_\_\_\_  $2.8$     c.  $8.1$  \_\_\_\_\_  $6.756$     d.  $0.05$  \_\_\_\_\_  $0.1$

### Introduced in Math 507, Lesson 2

Every whole number is divisible by itself and 1.  $47 \div 47 = 1$  and  $47 \div 1 = 47$ .

A number that is divisible by no other number besides 1 and itself is called a **prime number**. A number that is divisible by some other number besides 1 and itself is called a **composite** (käm • pä' • zət) **number**.

The numbers 0 and 1 are neither prime nor composite.

Any number greater than 7 that is divisible by 2, 3, 5, or 7 is composite. If a number under 100 is not divisible by 2, 3, 5, or 7, it is a prime number.

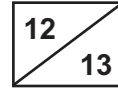
Label each number  $P$  for *prime* or  $C$  for *composite*. If you write  $C$ , also write 2, 3, 5, or 7 to show the key factors.

19. a. 21 \_\_\_\_\_    b. 28 \_\_\_\_\_    c. 17 \_\_\_\_\_

Label each number  $P$  for prime or  $C$  for composite.

20. a. 52 \_\_\_\_\_    b. 29 \_\_\_\_\_    c. 34 \_\_\_\_\_    d. 3 \_\_\_\_\_    e. 42 \_\_\_\_\_

## Pretest – Ratios and Proportions



Ask your teacher to initial the circle before you begin this pretest.

**Multiply by 3 to make larger equivalent ratios.** (1 point each.) [4]

1. a.  $\frac{5}{2} = \underline{\hspace{2cm}}$       b.  $\frac{1}{1} = \underline{\hspace{2cm}}$       c.  $\frac{3}{10} = \underline{\hspace{2cm}}$       d.  $\frac{4}{3} = \underline{\hspace{2cm}}$

**Reduce these ratios to simplest form.** (1 point each.) [4]

2. a.  $\frac{9}{3} = \underline{\hspace{2cm}}$       b.  $\frac{16}{14} = \underline{\hspace{2cm}}$       c.  $\frac{12}{32} = \underline{\hspace{2cm}}$       d.  $\frac{10}{2} = \underline{\hspace{2cm}}$

**Solve these proportions.** (1 point each.) [3]

3. a.  $\frac{4 \text{ cars}}{6 \text{ people}} = \frac{n \text{ cars}}{15 \text{ people}}$       b.  $\frac{60 \text{ planes}}{4 \text{ airports}} = \frac{120 \text{ planes}}{n \text{ airports}}$       c.  $\frac{3 \text{ people}}{1 \text{ Bible}} = \frac{n \text{ people}}{3 \text{ Bibles}}$   
 $n = \underline{\hspace{2cm}}$        $n = \underline{\hspace{2cm}}$        $n = \underline{\hspace{2cm}}$

**Set up proportions and solve.** (1 point each.) [2]



4. Sam thought the ratio of sandwiches to firefighters should be 3 : 1. There were 18 firefighters battling the blaze. How many sandwiches should Sam bring?

$n = \underline{\hspace{2cm}}$



5. Mr. Gordon's flock contains 4 geese for every 6 ducks. If he has 6 geese, how many ducks does he have?

$n = \underline{\hspace{2cm}}$



Ask your teacher to look over this pretest and mark the boxes on page 40.

I can have 13 answers correct.  
 I must have 12 answers correct to pass.  
 I have \_\_\_ correct.

# 12

- I passed Lesson 11 pretest.  
Do pretest on page 43.  
*Extra Activity*, optional (1, 2, 3, 4, 5, 6, 7, 8, 9).
- I did not pass Lesson 11 pretest.  
Do all of Lesson 12.

Speed Drill 12

## Practice Set – Ratios and Proportions

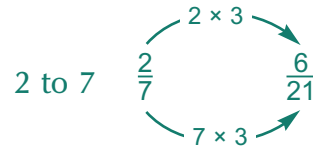
### Introduced in Math 505, Lesson 9; Math 506, Lesson 6

We can write ratios in three different ways:  $5:7$  or  $5$  to  $7$  or  $\frac{5}{7}$

We say each one the same way: “five to seven.”

Follow these steps to make larger equivalent ratios.

1. Change the ratio to fraction form.
2. Multiply both terms of the ratio by the same number to get a larger equivalent ratio.



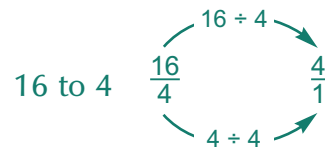
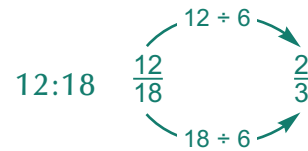
### Multiply by 5 to make larger equivalent ratios.

1. a.  $\frac{1}{4} = \underline{\hspace{2cm}}$       b.  $\frac{7}{2} = \underline{\hspace{2cm}}$       c.  $\frac{3}{6} = \underline{\hspace{2cm}}$       d.  $\frac{2}{3} = \underline{\hspace{2cm}}$

### Introduced in Math 506, Lesson 9

Follow these steps to reduce a ratio to simplest form.

1. Change the ratio to fraction form.
2. Divide both terms of the ratio by the same number until it is in simplest form.



### Reduce these ratios to simplest form.

2. a.  $\frac{6}{18} = \underline{\hspace{2cm}}$       b.  $\frac{200}{300} = \underline{\hspace{2cm}}$       c.  $\frac{10}{8} = \underline{\hspace{2cm}}$       d.  $\frac{8}{12} = \underline{\hspace{2cm}}$

**Introduced in Math 506, Lesson 12**

To find the missing term in a proportion, sometimes you must divide and sometimes you must multiply.

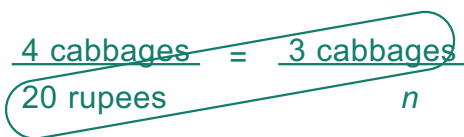


**Solve these proportions.**

3. a.  $\frac{4 \text{ cm width}}{5 \text{ cm length}} = \frac{8 \text{ cm width}}{n \text{ cm length}}$       b.  $\frac{4 \text{ L water}}{32 \text{ mL fertilizer}} = \frac{n \text{ L water}}{16 \text{ mL fertilizer}}$       c.  $\frac{5 \text{ cups rice}}{2 \text{ cups beans}} = \frac{25 \text{ cups rice}}{n \text{ cups beans}}$
- $n = \underline{\hspace{2cm}}$                        $n = \underline{\hspace{2cm}}$                        $n = \underline{\hspace{2cm}}$

**Introduced in Math 507, Lesson 1**

Sometimes you must cross multiply and divide to find the missing term in a proportion.



$3 \times 20 = 60$

**Step 1** Multiply the diagonal that has no missing number.

$60 \div 4 = 15$

**Step 2** Divide the product from Step 1 by the number that is left.

$n = 15$

**Solve these proportions.**

4. a.  $\frac{2 \text{ sheep}}{6 \text{ goats}} = \frac{5 \text{ sheep}}{n \text{ goats}}$       b.  $\frac{75¢}{3 \text{ oranges}} = \frac{n}{7 \text{ oranges}}$       c.  $\frac{7 \text{ books}}{14 \text{ students}} = \frac{3 \text{ books}}{n \text{ students}}$
- $n = \underline{\hspace{2cm}}$                        $n = \underline{\hspace{2cm}}$                        $n = \underline{\hspace{2cm}}$

## Lesson 12

### Introduced in Math 507, Lesson 11

To set up a proportion, use a variable such as  $n$  for the missing number. It is important to keep the units of both ratios in the same place in the proportion. The top units of both ratios must be the same, and the bottom units of both ratios must be the same.

$$\frac{3 \text{ adults}}{16 \text{ children}} = \frac{18 \text{ adults}}{n \text{ children}}$$

#### Set up proportions and solve.



5. The ratio is 2 cups flour to 1 cup sugar for a cake. Brian used 40 cups of flour to bake cakes at the bakery. How many cups of sugar did he use?

$$n = \underline{\hspace{2cm}}$$



6. Vince mixed 2 parts yellow paint with 3 parts red paint to get orange for the sunset he was painting. If he started with 50 mL of yellow paint, how much red paint did he add to the mixture?

$$n = \underline{\hspace{2cm}}$$



7. The fuel mixture for the boat is 5 parts gasoline to 2 parts oil. Gene poured 4 gallons of oil into the tank. How much gasoline should he add?

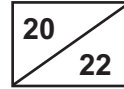
$$n = \underline{\hspace{2cm}}$$



8. Randy is 5 feet tall and his shadow is 7 feet long. The shadow of an electric pole is 35 feet long. How tall is the pole?

$$n = \underline{\hspace{2cm}}$$

## Pretest – Rounding and Estimating



Ask your teacher to initial the circle before you begin this pretest.

**Round to the nearest . . .** (1 point each.) [10]

- |                      |                  |                    |
|----------------------|------------------|--------------------|
| 1. thousand.         | a. 120,583 _____ | b. 49,063 _____    |
| 2. ten.              | a. 45,637 _____  | b. 8,397 _____     |
| 3. hundred thousand. | a. 589,624 _____ | b. 8,639,712 _____ |
| 4. ten thousand.     | a. 115,439 _____ | b. 896,472 _____   |
| 5. hundred.          | a. 115,439 _____ | b. 49,063 _____    |

**Round to the nearest . . .** (1 point each.) [6]

- |                |                 |                 |
|----------------|-----------------|-----------------|
| 6. thousandth. | a. 0.2298 _____ | b. 0.5107 _____ |
| 7. tenth.      | a. 0.949 _____  | b. 0.76 _____   |
| 8. hundredth.  | a. 0.728 _____  | b. 0.1843 _____ |

**Round to the nearest whole number.** (1 point each.) [6]

- |                     |               |                 |
|---------------------|---------------|-----------------|
| 9. a. 18.673 _____  | b. 9.43 _____ | c. 3.91 _____   |
| 10. a. 9.9486 _____ | b. 28.9 _____ | c. 10.321 _____ |



Ask your teacher to look over this pretest and mark the boxes on page 44.

I can have 22 answers correct.  
 I must have 20 answers correct to pass.  
 I have \_\_\_\_ correct.