

# Chapter 3 (Operations with Rational Numbers)

## Bringing It All Together #1

### Vocabulary Check

State whether the statement is *true* or *false*.

If *false*, replace the underlined word or number to make a true sentence.

- \_\_\_\_\_ 1) Numbers that can be written as fractions are called reciprocals.
- \_\_\_\_\_ 2) The decimal 4.7 is a terminating decimal.
- \_\_\_\_\_ 3) The fractions  $\frac{4}{6}$  and  $\frac{1}{3}$  are like fractions.
- \_\_\_\_\_ 4) To add unlike fractions, rename the fractions using the GCF.
- \_\_\_\_\_ 5) A mixed number is another name for the multiplicative inverse.
- \_\_\_\_\_ 6) The product of a number and its multiplicative inverse is 1.
- \_\_\_\_\_ 7) Like fractions are fractions that have the same numerator.
- \_\_\_\_\_ 8) Repeating decimals use bar notation to show which digits terminate.
- \_\_\_\_\_ 9) You need a common denominator to divide fractions.
- \_\_\_\_\_ 10) Decimals that repeat or terminate are rational numbers.

### 3-1 Writing Fractions as Decimals (pp. 121-127)

Write each fraction or mixed number as a decimal.

Use bar notation to show a repeating decimal.

- \_\_\_\_\_ 11)  $\frac{3}{10}$                       \_\_\_\_\_ 12)  $\frac{2}{5}$                       \_\_\_\_\_ 13)  $-\frac{5}{6}$
- \_\_\_\_\_ 14)  $-7\frac{4}{9}$                       \_\_\_\_\_ 15)  $\frac{5}{8}$                       \_\_\_\_\_ 16)  $1\frac{4}{15}$

Replace each  $\bigcirc$  with  $<$ ,  $>$ , or  $=$  to make a true sentence.

- \_\_\_\_\_ 17)  $2\frac{1}{2} \bigcirc 2\frac{5}{12}$                       \_\_\_\_\_ 18)  $\frac{5}{8} \bigcirc 0.625$                       \_\_\_\_\_ 19)  $10.74 \bigcirc 10\frac{7}{10}$
- \_\_\_\_\_ 20)  $4.\overline{37} \bigcirc 4\frac{19}{50}$                       \_\_\_\_\_ 21)  $-2.54 \bigcirc 2\frac{27}{50}$                       \_\_\_\_\_ 22)  $-\frac{4}{5} \bigcirc \frac{1}{7}$

**OVER**  $\longrightarrow$

Name \_\_\_\_\_ Date \_\_\_\_\_ Pd \_\_\_\_\_

### 3-2 Rational Numbers (pp. 128-133)

Write each decimal as a fraction or mixed number in simplest form.

\_\_\_\_\_ 23) 2.08      \_\_\_\_\_ 24) -0.45      \_\_\_\_\_ 25) 0.875

\_\_\_\_\_ 26) -0.56      \_\_\_\_\_ 27)  $0.\bar{1}$       \_\_\_\_\_ 28)  $-2.\overline{03}$

\_\_\_\_\_ 29)  $0.\bar{5}$       \_\_\_\_\_ 30)  $10.\overline{27}$       \_\_\_\_\_ 31)  $1.\bar{6}$

Identify all sets to which each number belongs.

\_\_\_\_\_ 32) -4      \_\_\_\_\_ 33)  $3\frac{1}{3}$

\_\_\_\_\_ 34) 1.151551555 ...      \_\_\_\_\_ 35)  $-0.\overline{67}$

### 3-6 Adding and Subtracting Unlike Fractions (pp. 153-158)

Find each sum or difference. Write in simplest form.

\_\_\_\_\_ 36)  $\frac{2}{5} + \frac{1}{15}$       \_\_\_\_\_ 37)  $-3\frac{5}{6} - 2\frac{1}{2}$

\_\_\_\_\_ 38)  $\frac{4}{7} + -1\frac{1}{3}$       \_\_\_\_\_ 39)  $\frac{3}{10} - -\frac{1}{8}$

\_\_\_\_\_ 40)  $25\frac{1}{3} - 14\frac{2}{5}$       \_\_\_\_\_ 41)  $7\frac{3}{4} + 1\frac{3}{8}$

\_\_\_\_\_ 42)  $-\frac{5}{9} - 3\frac{2}{3}$       \_\_\_\_\_ 43)  $-4\frac{1}{6} + \frac{3}{4}$

\_\_\_\_\_ 44) Monica needs  $2\frac{3}{4}$  cups of flour for a batch of cookies and  $3\frac{1}{3}$  cups of flour for a dozen muffins. How many cups of flour does Monica need altogether?

\_\_\_\_\_ 45) Dane and his family drove 357.9 miles in one day. If their trip is a total of  $524\frac{3}{4}$  miles, how much farther do they need to drive?

**OVER** 

Name \_\_\_\_\_ Date \_\_\_\_\_ Pd \_\_\_\_\_

### 3-3 Multiplying Rational Numbers (pp. 134-139)

Find each product. Write in simplest form.

\_\_\_\_\_ 46)  $\frac{1}{5} \cdot \frac{3}{4}$

\_\_\_\_\_ 47)  $-\frac{3}{7} \cdot \frac{4}{9}$

\_\_\_\_\_ 48)  $-\frac{2}{53} \cdot -5$

\_\_\_\_\_ 49)  $-3\frac{1}{2} \cdot -5\frac{1}{5}$

\_\_\_\_\_ 50) Mireille has a piece of ribbon that is 10 inches long. Abi's ribbon is  $\frac{5}{8}$  as long. How long is Abi's ribbon?

\_\_\_\_\_ 51) A liter of water weighs approximately  $2\frac{1}{5}$  pounds. While backpacking, Enrique wants to carry  $3\frac{1}{2}$  liters of water with him. Find the weight of the water that Enrique is taking with him.

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### 3-4 Dividing Rational Numbers (pp. 141-146)

Find the multiplicative inverse of each number.

\_\_\_\_\_ 52)  $-16$

\_\_\_\_\_ 53)  $\frac{7}{9}$

\_\_\_\_\_ 54)  $3\frac{4}{5}$

\_\_\_\_\_ 55)  $-4\frac{1}{3}$

Find each quotient. Write in simplest form.

\_\_\_\_\_ 56)  $\frac{7}{9} \div -\frac{4}{15}$

\_\_\_\_\_ 57)  $-2\frac{2}{3} \div 2\frac{2}{7}$

\_\_\_\_\_ 58)  $\frac{3}{5} \div \frac{9}{10}$

\_\_\_\_\_ 59)  $3\frac{1}{9} \div -1\frac{1}{6}$

\_\_\_\_\_ 60) Pilar drinks  $1\frac{3}{4}$  glasses of milk each day. At this rate, how many days will it take her to drink a total of 14 glasses?



# Answer Key Chapter 3

## Bringing It All Together #1

### Vocabulary Check

State whether the statement is *true* or *false*.

If *false*, replace the underlined word or number to make a true sentence.

**false; rational** 1) Numbers that can be written as fractions are called reciprocals.

**true** 2) The decimal 4.7 is a terminating decimal.

**false; unlike** 3) The fractions  $\frac{4}{6}$  and  $\frac{1}{3}$  are like fractions.

**false; LCD or LCM** 4) To add unlike fractions, rename the fractions using the GCF.

**false; reciprocal** 5) A mixed number is another name for the multiplicative inverse.

**true** 6) The product of a number and its multiplicative inverse is 1.

**false; denominator** 7) Like fractions are fractions that have the same numerator.

**false; repeat** 8) Repeating decimals use bar notation to show which digits terminate.

**false; add or subtract** 9) You need a common denominator to divide fractions.

**true** 10) Decimals that repeat or terminate are rational numbers.

### 3-1 Writing Fractions as Decimals (pp. 121-127)

Write each fraction or mixed number as a decimal.

Use bar notation to show a repeating decimal.

**0.3** 11)  $\frac{3}{10}$       **0.4** 12)  $\frac{2}{5}$        **$-0.8\bar{3}$**  13)  $-\frac{5}{6}$

**$-7.\bar{4}$**  14)  $-7\frac{4}{9}$       **0.625** 15)  $\frac{5}{8}$        **$1.2\bar{6}$**  16)  $1\frac{4}{15}$

Replace each  $\bigcirc$  with  $<$ ,  $>$ , or  $=$  to make a true sentence.

**$>$**  17)  $2\frac{1}{2} \bigcirc 2\frac{5}{12}$        **$=$**  18)  $\frac{5}{8} \bigcirc 0.625$        **$>$**  19)  $10.74 \bigcirc 10\frac{7}{10}$

**$<$**  20)  $4.\overline{37} \bigcirc 4\frac{19}{50}$        **$<$**  21)  $-2.54 \bigcirc 2\frac{27}{50}$        **$<$**  22)  $-\frac{4}{5} \bigcirc \frac{1}{7}$

Name \_\_\_\_\_ Date \_\_\_\_\_ Pd \_\_\_\_\_

### 3-2 Rational Numbers (pp. 128-133)

Write each decimal as a fraction or mixed number in simplest form.

$2\frac{2}{25}$

23) 2.08

$-\frac{9}{20}$

24) -0.45

$\frac{7}{8}$

25) 0.875

$-\frac{14}{25}$

26) -0.56

$\frac{1}{9}$

27)  $0.\bar{1}$

$-2\frac{1}{33}$

28)  $-2.\overline{03}$

$\frac{5}{9}$

29)  $0.\bar{5}$

$10\frac{3}{11}$

30)  $10.\overline{27}$

$1\frac{2}{3}$

31)  $1.\bar{6}$

Identify all sets to which each number belongs.

integer, rational 32) -4

rational 33)  $3\frac{1}{3}$

irrational 34) 1.151551555 ...

rational 35)  $-0.\overline{67}$

### 3-6 Adding and Subtracting Unlike Fractions (pp. 153-158)

Find each sum or difference. Write in simplest form.

$\frac{7}{15}$

36)  $\frac{2}{5} + \frac{1}{15}$

$-6\frac{1}{3}$

37)  $-3\frac{5}{6} - 2\frac{1}{2}$

$-\frac{16}{21}$

38)  $\frac{4}{7} + -1\frac{1}{3}$

$\frac{17}{40}$

39)  $\frac{3}{10} - -\frac{1}{8}$

$10\frac{14}{15}$

40)  $25\frac{1}{3} - 14\frac{2}{5}$

$9\frac{1}{8}$

41)  $7\frac{3}{4} + 1\frac{3}{8}$

$-4\frac{2}{9}$

42)  $-\frac{5}{9} - 3\frac{2}{3}$

$-3\frac{5}{12}$

43)  $-4\frac{1}{6} + \frac{3}{4}$

$6\frac{1}{12}$

44) Monica needs  $2\frac{3}{4}$  cups of flour for a batch of cookies and  $3\frac{1}{3}$  cups of flour for a dozen muffins. How many cups of flour does Monica need altogether?

$166\frac{17}{20}$

45) Dane and his family drove 357.9 miles in one day.

If their trip is a total of  $524\frac{3}{4}$  miles, how much farther do they need to drive?

**3-3 Multiplying Rational Numbers (pp. 134-139)**

Find each product. Write in simplest form.

$\frac{3}{20}$

46)  $\frac{1}{5} \cdot \frac{3}{4}$

$-\frac{4}{21}$

47)  $-\frac{3}{7} \cdot \frac{4}{9}$

$\frac{10}{53}$

48)  $-\frac{2}{53} \cdot -5$

$18\frac{1}{5}$

49)  $-3\frac{1}{2} \cdot -5\frac{1}{5}$

$6\frac{1}{4}$  in 50) Mireille has a piece of ribbon that is 10 inches long. Abi's ribbon is  $\frac{5}{8}$  as long. How long is Abi's ribbon?

$7\frac{7}{10}$  lb 51) A liter of water weighs approximately  $2\frac{1}{5}$  pounds. While backpacking, Enrique wants to carry  $3\frac{1}{2}$  liters of water with him. Find the weight of the water that Enrique is taking with him.

**3-4 Dividing Rational Numbers (pp. 141-146)**

Find the multiplicative inverse of each number.

$-\frac{1}{16}$

52)  $-16$

$\frac{9}{7}$

53)  $\frac{7}{9}$

$\frac{5}{19}$

54)  $3\frac{4}{5}$

$-\frac{3}{13}$

55)  $-4\frac{1}{3}$

Find each quotient. Write in simplest form.

$-2\frac{11}{12}$

56)  $\frac{7}{9} \div -\frac{4}{15}$

$-1\frac{1}{6}$

57)  $-2\frac{2}{3} \div 2\frac{2}{7}$

$\frac{2}{3}$

58)  $\frac{3}{5} \div \frac{9}{10}$

$-2\frac{2}{3}$

59)  $3\frac{1}{9} \div -1\frac{1}{6}$

8 days 60) Pilar drinks  $1\frac{3}{4}$  glasses of milk each day. At this rate, how many days will it take her to drink a total of 14 glasses?

**FINALLY DONE**