Course 2 Unit 1 Practice

LESSON 1-1

1. Estimate each sum or difference to the nearest unit.

  a. $8.56 + $2.35 − $43.95

  b. 13.465 − 4.5

  c. 19.598 − 11.19

2. Find each sum or difference.

  a. 7.82 + 15.6 + 29.509

  b. 20.37 − 12.083

  c. 8 − 0.057

  d. 8.97 + 7.035

  e. 26.13 + 15 + 11.013

3. **Make sense of problems and persevere in solving them.** Liam needs to shop for school supplies. The prices for some school supplies are in the table below.

School Supplies

Item	Cost	Estimate	Items Liam will Need
Binder	5 for $15		
Dividers	$1.99		
Filler paper	$6.29		
Book bag	$37.49		
Calculator (scientific)	$12.40		
Highlighter	$4.99		
Index cards	$2		
Jump drive	$6.99		
Pencils (box of 12)	$1.49		
Pens (box of 12)	$1.69		
Post it flags	$5.49		
Protractor	$1.19		
Ruler	$2.49		
Water bottle	$12.50		
Total		Cost of Liam's Items	

  a. Estimate the cost of each item.

  b. Liam cannot spend more than $50 on school supplies. Choose items you think Liam will need for school. Stay within his budget.

  c. Find the total cost of the items you chose for Liam. Calculate his change, if any.

4. Critique the reasoning of others. Oriana said that the difference between 9.298 and 3.01 was 8.997. Was she correct? If not, what error did she make?

5. Ethan bought a printer on sale for $59.99 and a jump drive for $6.99. The sales tax on the total was $5.36. Ethan gave the sales person four $20 bills. How much change did Ethan receive?

   A. $7.66

   B. $13.02

   C. $15.21

   D. $18.59

LESSON 1-2

6. Find each product or quotient.

   a. 0.005×120

   b. $405 \div 5.4$

   c. $40.68 \div 0.9$

   d. 0.8×35.7

   e. 7.2×0.05

   f. $12 \div 0.12$

7. Reason quantitatively. Without doing the computation, explain why 0.25 is not a reasonable answer for 2.05×10. What is the actual product?

8. Seven people spent a total of $151.55 on lunch. If they shared the cost equally, how much did each person pay?

   A. $9.35

   B. $21.65

   C. $42.15

   D. $216.50

9. Make sense of problems. Shae makes $12.50 an hour. If she works 6.5 hours a day, after how many days will she have earned $500?

10. Jane bought 3 jeans for $32.79 each and 5 T-shirts for $12.95 each. She gave the cashier $180. How much change did Jane receive?

LESSON 1-3

11. Evaluate each expression. Write the answer as a mixed number or a fraction in simplest form.

   a. $3\dfrac{1}{2} + 1\dfrac{3}{4}$

   b. $10\dfrac{3}{8} - 5\dfrac{1}{2}$

   c. $30 - 7\dfrac{1}{3}$

   d. $\dfrac{5}{6} \div \dfrac{2}{3}$

   e. $1\dfrac{7}{8} \times \dfrac{4}{5}$

   f. $9\dfrac{3}{4} + 4\dfrac{5}{6} + 1\dfrac{3}{4}$

   g. $6\dfrac{2}{5} \times 3\dfrac{1}{8}$

   h. $8\dfrac{2}{3} \div 3\dfrac{1}{3}$

12. Attend to precision. Explain how you would divide a mixed number by a fraction.

13. John cut a 4 ft long piece of lumber into shorter pieces to repair his deck. He cut three pieces each $\frac{3}{4}$ ft long, and two pieces each $\frac{1}{2}$ ft long. How much wood did he have left?

  A. $\frac{3}{4}$ ft

  B. 1 ft

  C. $1\frac{1}{2}$ ft

  D. $2\frac{3}{4}$ ft

14. Model with mathematics. Draw a model to show $\frac{1}{2} \times \frac{3}{4}$. What is the product?

15. Brian has a chunk of cheese that weighs 5 lb. He wants to divide the chunk into smaller pieces that weigh $\frac{1}{4}$ lb each. How many smaller pieces will he have?

LESSON 1-4

16. Express each mixed number as a decimal. Indicate whether the decimal is terminating or repeating.

  a. $3\frac{5}{8}$

  b. $4\frac{2}{3}$

  c. $8\frac{2}{5}$

  d. $10\frac{7}{20}$

  e. $5\frac{7}{9}$

  f. $12\frac{3}{11}$

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

  a. $5\frac{1}{3}$ ___ 5.35

  b. $6\frac{3}{4}$ ___ $6.\overline{72}$

  c. 0.32 ___ $\frac{1}{3}$

  d. 8.25 ___ $8\frac{1}{4}$

  e. $10\frac{3}{5}$ ___ 10.3

18. Order the numbers from least to greatest.

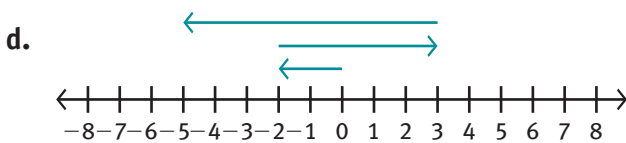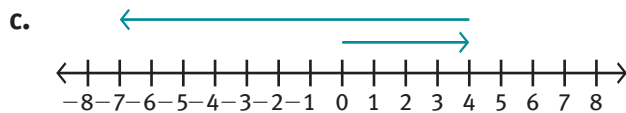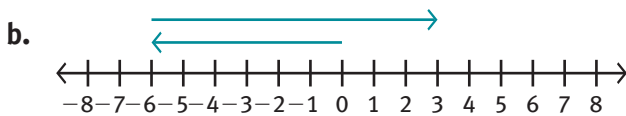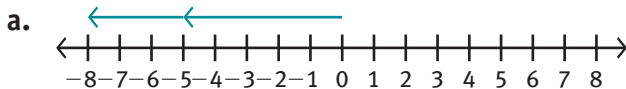 $2.65, 2\frac{3}{5}, 2\frac{2}{3}, 2\frac{1}{3}, 2\frac{3}{8}$

19. Which fraction can be written as a terminating decimal?

A. $\dfrac{11}{13}$

B. $\dfrac{10}{18}$

C. $\dfrac{13}{20}$

D. $\dfrac{18}{27}$

20. Reason quantitatively. Which is greater 0.67 or $0.\overline{67}$? Explain.

LESSON 2-1

21. Model mathematics. Write the addition problem shown by each model.

a.

b.

c.

d.

22. Attend to precision. Explain how to find the sum of $-8 + -5$ without using a number line.

23. Find each sum.

   a. $-26 + 19$

   b. $-38 + (-21)$

   c. $-32 + 57$

   d. $45 + (-17)$

   e. $-13 + (-39)$

   f. $-49 + 78$

   g. $35 + (-63)$

   h. $-68 + (-22)$

   i. $-89 + 21$

   j. $90 + (-18)$

24. Construct a viable argument. Mr. Allen has $149 in his checking account. He wants to write a check for $169 to pay a bill. Is this a good idea? Why or why not? Use addition of integers in your explanation.

25. A scuba diver descended to an elevation of -50 feet, examined some coral, and then ascended 14 feet to observe a school of clownfish. At what elevation was the school of clownfish?

   A. -24 feet

   B. -36 feet

   C. -46 feet

   D. -64 feet

LESSON 2-2

26. Write the opposite of each integer.

    a. -9

    b. $-(-7)$

    c. 15

    d. $-|-13|$

    e. 0

27. Reason abstractly. Explain how you can use addition of integers to subtract integers.

28. Which expression shows $-6 - (-7)$ as an addition problem?

    A. $-6 + (-7)$

    B. $-6 + 7$

    C. $6 + (-7)$

    D. $6 + 7$

29. Subtract.

    a. $46 - 85$

    b. $-12 - (-18)$

    c. $-9 - 23$

    d. $39 - (-17)$

    e. $-65 - (-29)$

    f. $73 - 94$

    g. $-2 - 88$

    h. $57 - (-34)$

    i. $-15 - (-42)$

    j. $-24 - 18$

30. The difference between the temperature at 5 pm and midnight is $-8°$F. Write an expression that could be used to represent this situation. Explain.

LESSON 3-1

31. What determines the sign of a product? What is the sign of the product of two negative integers?

32. Find each product.

    a. $-12(8)$

    b. $9 \cdot (-7)$

    c. $(-15)(-3)$

    d. $18(-6)$

    e. $-20(-8)$

    f. $(-30)(-10)(-5)$

    g. $(-2)^3$

    h. $(-5)^2 - (-3)^3$

    i. $(8 - 15)^2$

    j. $|-16| \cdot (-3)$

33. Reason quantitatively. Simplify $(-2)^3 - 2^5$.

    A. -40

    B. -16

    C. 24

    D. 40

34. Find the number that goes in the blank.

    a. $-42 = \_\_\_ \times 7$

    b. $-8 \times \_\_\_ = 72$

    c. $3 \times \_\_\_ = -36$

    d. $\_\_\_ \times (-4) = -60$

    e. $54 = \_\_\_ \times -6$

35. An airplane descends at a rate of 450 feet per minute. Write and evaluate an expression to show how far the plane will descend in 7 minutes.

LESSON 3-2

36. Reason quantitatively. Which expression, when evaluated, gives the greatest number?

    A. $3 \cdot (-5)$

    B. $-3 + 15$

    C. $-15 \div (-3)$

    D. $3 - 15$

37. Find each quotient.

    a. $-63 \div 7$

    b. $48 \div (-6)$

    c. $-96 \div -8$

    d. $-\dfrac{72}{9}$

    e. $\dfrac{125}{-5}$

    f. $\dfrac{-54}{-9}$

    g. $121 \div -11$

    h. $-56 \div 8$

    i. $\dfrac{57}{-3}$

    j. $-\dfrac{45}{-5}$

38. Evaluate each expression.

    a. $-32 \div [-24 \div (-3)]$

    b. $-48 \div 16 - (-5)$

    c. $-6 \cdot 12 \div (-9)$

    d. $-7 + (-42) \div 7$

    e. $[-59 - (-17)] \div (-6)$

39. The low temperatures in Fairbanks, Alaska for 5 consecutive days were −12°F, −15°F, −7°F, 0°F, and 9°F. What was the average low temperature for the 5 days?

40. Reason quantitatively. Which two integers have a difference of 24 and a quotient of -7?

LESSON 4-1

41. Place a check mark in the box for any set for which the given number is a member.

Number	Whole Number	Integer	Rational Number
$2\dfrac{3}{5}$			
0.00001			
0			
−1			
$-0.\overline{54}$			

42. Give an example of each.

   a. a rational number that is an integer

   b. an integer that is not a whole number

   c. a rational number that is not an integer

43. **Reason abstractly.** Explain how you know that 0.38 is a rational number.

44. Which statement is true?

   A. a rational number is always an integer

   B. an integer is always a whole number

   C. a rational number is always a whole number

   D. an integer is always a rational number

45. Three mice are competing in a race.
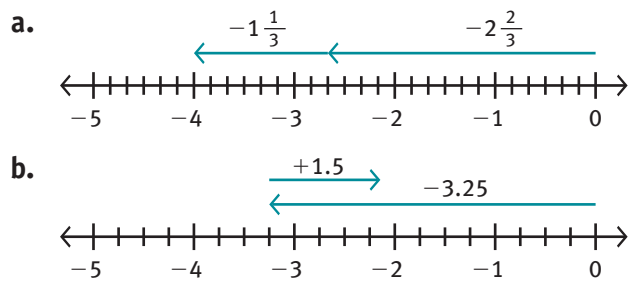Mouse A reaches the finish line in 5.65 seconds.
Mouse B reaches the finish line in $5\frac{2}{5}$ seconds.
Mouse C reaches the finish line in $5\frac{2}{3}$ seconds.
List the mice in order from fastest to slowest.

LESSON 4-2

46. **Model with mathematics.** Write the sum shown by the arrows.

   a.

   b.

47. Add.

   a. $25.6 + (-11.9)$

   b. $-6\frac{1}{2} + 8\frac{2}{5}$

   c. $13\frac{2}{3} + \left(-15\frac{5}{6}\right)$

   d. $-56.7 + (-19.5)$

   e. $-28\frac{1}{3} + 17\frac{3}{4}$

   f. $-35.8 + (-24.3)$

   g. $-41 + 25\frac{5}{8}$

   h. $60.2 + (-5.7) + (-36.8)$

   i. $7\frac{3}{8} + (-50.75) + \left(-25\frac{1}{2}\right) + 90.5$

   j. $-8\frac{5}{6} + 7\frac{1}{3} + \left(-9\frac{1}{2}\right) + 16$

48. Compare. Write $<, =, >$.

a. $-18\frac{4}{5} + 49$ _____ $15\frac{2}{5} + \left(-45\frac{3}{5}\right)$

b. $49\frac{2}{7} + \left(-52\frac{3}{8}\right)$ _____ $52\frac{3}{8} + \left(-49\frac{2}{7}\right)$

c. $19\frac{1}{2} + \left(-19\frac{3}{6}\right)$ _____ $-21\frac{2}{3} + \left(21\frac{2}{6}\right)$

d. $10\frac{5}{9} + \left(-10\frac{2}{3}\right)$ _____ $-3\frac{7}{9} + \left(3\frac{2}{3}\right)$

e. $-7.2 + -8.6$ _____ $-8 + (-7.4)$

49. Make sense of problems. Alex had $573.49 in his checking account. He wrote checks for $65.90 and $258.25. He then deposited $135 into his account. Which expression can you use to find the amount that remained in Alex's account?

A. $573.49 + (-65.90) + 258.25 + 135$

B. $573.49 + (-65.90) + (-258.25) + 135$

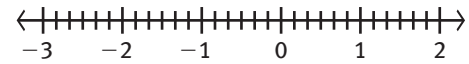**C.** $573.49 + (-65.90) + 258.25 + (-135)$

D. $573.49 + 65.90 + (-258.25) + 135$

50. The deck from which a diver descended was $23\frac{1}{2}$ feet above sea level. A diver descended $38\frac{3}{4}$ feet from the deck into the sea. What depth did the diver reach?
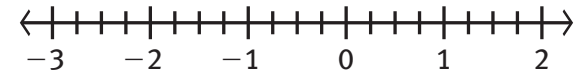
LESSON 4-3

51. Model with mathematics. Draw arrows on the number line to show the subtraction problem.

a. $-1\frac{1}{3} - \left(-2\frac{2}{3}\right)$

b. $-0.75 - 1.5$

52. Write each subtraction problem as an addition problem.

a. $-3\frac{5}{6} - \left(-8\frac{2}{3}\right)$

b. $17.5 - 23.75$

c. $45.7 - (-12.3)$

d. $-12\frac{3}{8} - 7.25$

e. $5 - 2\frac{3}{5}$

53. Find the value of each expression.

a. $\frac{3}{8} - \left(-5\frac{1}{4}\right)$

b. $-4\frac{2}{3} - \left(-\frac{5}{6}\right)$

c. $9 - 6\frac{3}{4}$

d. $-12 + 7\frac{1}{2}$

e. $38.\overline{9} - 19\frac{2}{3}$

f. $1\frac{1}{2} - 3.6$

g. $31 - 14.05$

h. $6\frac{2}{5} - 1.4 - \left(-3\frac{7}{10}\right)$

i. $-50\frac{3}{4} + (-6.05) + 100$

j. $23\frac{7}{8} - 15\frac{3}{40} + \left(-3\frac{4}{5}\right)$

54. Hali borrowed $5.75 from her brother and $11.15 from her sister.

a. How much money does Hali owe?

b. Hali's aunt gave her $25 for her birthday. How much money will Hali have after she pays what she owes?

c. Will Hali be able to buy a book for $14.79? Explain.

55. A submersible at the Oceanographic Institution dove to a depth of 3,810 meters below sea level. It then dove an additional 690 meters. How many meters below sea level was the submersible after the second dive?

A. 3,120 meters

B. 3,780 meters

C. 4,320 meters

D. 4,500 meters

LESSON 4-4

56. Without calculating, write the sign of the result of each operation.

a. $\frac{1}{2} + \left(-\frac{3}{4}\right)$

b. $-\frac{2}{3} \times \left(-\frac{1}{3}\right)$

c. $-\frac{3}{8} \div \left(-\frac{1}{3}\right)$

d. $-\frac{4}{5} + \frac{9}{10}$

e. $\frac{5}{9} - \left(-\frac{1}{3}\right)$

57. Find each product or quotient.

    a. $60 \div (-50)$

    b. -18×3.8

    c. $24 \div (-0.080)$

    d. $(-0.3)(-0.2)$

    e. $-\dfrac{1}{2} \div (-50)$

    f. $-\dfrac{3}{4} \div \dfrac{5}{12}$

    g. $1\dfrac{5}{6} \div \left(-3\dfrac{2}{3}\right)$

    h. $-12\left(-5\dfrac{5}{6}\right)$

    i. $(-0.3)^3$

    j. $100 \div (-0.05)^2$

58. At noon, the temperature on Mt. Washington in Maine was 0°C. The temperature dropped an average of -0.5°C an hour. At what time would the temperature be -2.6°C?

59. **Make sense of problems.** The monthly average low temperatures for Prospect Creek, Alaska from January to June are shown in the table below.

Prospect Creek, Alaska Average Low Temperature °C						
Month	**January**	**February**	**March**	**April**	**May**	**June**
Temperature	-30.5	-30.8	-23.7	-14.2	-0.7	5.6

What was the average monthly low temperature for these six months rounded to the nearest tenth of a degree?

A. -20°C   **B.** -16.7°C   **C.** -15.7°C   **D.** -7.2°C

60. As an aircraft rises, the temperature falls. You can determine the change in temperature between the ground and the altitude the aircraft has reached by using the formula $c = -6.7\dfrac{a}{2000}$. What is the change of temperature (c), in degrees Fahrenheit, at an altitude (a) of 1500 ft?