Name _____ Class _____ Date _____

Practice 3-1

Rounding and Estimating

Estimate using front-end estimation.

1. 6.3 + 8.55 _____
2. 345 + 682 _____
3. 4.60 + 5.53 _____
4. $6.14 + $9.38 _____
5. $39.65 + $25.84 _____
6. 9.71 + 3.94 _____

Estimate by clustering.

7. $7.04 + $5.95 + $6.08 + $5.06 + $6.12 _____
8. 9.3 + 8.7 + 8.91 + 9.052 _____
9. 37.6 + 44.91 + 41 + 39.1 _____
10. 2.357 + 1.874 + 1.956 _____

Estimate by rounding each number to the same place value.

11. 14.66 + 25.19 _____
12. 8.7 + 3.21 + 3.899 _____
13. 194.78 − 12.31 _____
14. $289 − $67.20 _____
15. 800 − 301.47 _____
16. 0.06 + 19.41 _____

Round to the underlined place value.

17. 6.<u>7</u>39 _____
18. 52.<u>1</u>92 _____
19. <u>0</u>.61 _____
20. 348.5<u>0</u>8 _____

Estimate. State your method (rounding, front-end, or clustering).

21. 91.7 + 88.6 + 89.1 + 92.5 + 90.6 _____
22. 3.9 + 8.1 + 2.06 _____
23. $1.08 + $.95 + $.89 + $1.14 _____
24. 11.56 + 19.43 + 13.40 + 14.39 _____
25. 0.015 + 0.039 + 0.0266 _____

Name _____ Class _____ Date _____

Practice 3-2

Estimating Decimal Products and Quotients

Determine whether each product or quotient is reasonable. If it is not reasonable, find a reasonable result.

1. $62.77(29.8) = 187.0546$ _____

2. $16.132 \div 2.96 = 54.5$ _____

3. $(47.89)(6.193) = 296.5828$ _____

4. $318.274 \div 4.07 = 78.2$ _____

5. $2.65(-0.84) = -0.2226$ _____

6. $-38.6(-1.89) = 7.2954$ _____

7. $6{,}355 \div 775 = 8.2$ _____

8. $1{,}444.14 \div 67.8 = 213$ _____

9. $1.839(6.3) = 115.857$ _____

10. $3.276 \div 0.63 = 5.2$ _____

Estimate each product or quotient.

11. $8.73 \cdot 6.01$ _____

12. $11.042(4.56)$ _____

13. $197.4 \cdot 2.85$ _____

14. $675.1 \cdot 0.051$ _____

15. $479.2(3.2)$ _____

16. $712.9 \cdot 0.41$ _____

17. $11.57 \div 3.09$ _____

18. $43.68 \div 8.7$ _____

19. $29.5 \div 5.1$ _____

20. $\$41.09 \div \$6.88$ _____

21. $148.8 \div 9.8$ _____

22. $\$76.77 \div \$24.19$ _____

23. Apples cost \$.89 per lb. Estimate the cost of three 5-lb bags. _____

24. You buy 3 dinners that are \$6.85 each. Before tax and tip, the total is \$25.42. Is this total correct? Explain.

_____

25. You worked 18 hours last week and received \$92.70 in your paycheck. Estimate your hourly pay.

_____

Name _____ Class _____ Date _____

Practice 3-3

Mean, Median, and Mode

1. There were 8 judges at a gymnastics competition. Kathleen received these scores for her performance on the uneven parallel bars:
   8.9, 8.7, 8.9, 9.2, 8.8, 8.2, 8.9, 8.8

   a. Find these statistics: mean _____ median _____ mode _____

   b. Which measure of central tendency best describes the data? Explain.

   _____

   _____

   _____

   c. Why do you think that the highest and lowest judge's scores are disregarded in tallying the total score in a gymnastics competition?

   _____

   _____

Find the mean, median, and mode. Round to the nearest tenth where necessary. Identify any outliers.

	Data	Mean	Median	Mode	Outliers
2.	8, 15, 9, 7, 4, 5, 9, 11				
3.	70, 61, 28, 40, 60, 72, 25, 31, 64, 63				
4.	4.9, 5.7, 6.0, 5.3, 4.8, 4.9, 5.3, 4.7, 4.9, 5.6, 5.1				
5.	271, 221, 234, 240, 271, 234, 213, 253, 155				
6.	0, 2, 3, 3, 3, 4, 4, 5				

Use the data in the table. Round to the nearest tenth where necessary.

Peak	Height (ft)
Mont Blanc	15,771
Monte Rosa	15,203
Dom	14,911
Liskamm	14,852
Weisshorn	14,780

7. What is the mean height of the five highest European mountains? _____

8. What is the median height? _____

9. Is any of the heights an outlier? Explain.

   _____

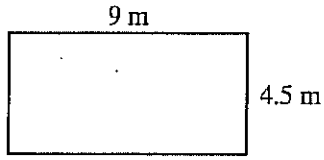
Name _____ Class _____ Date _____

Practice 3-4

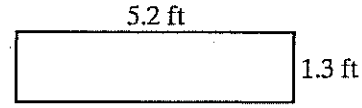
Using Formulas

Use the formula $P = 2l + 2w$. Find the perimeter of each rectangle.

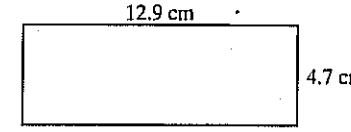
1. _____



2. _____



3. _____



Use the formula $A = lw$. Find the area of each rectangle above.

4. _____ 5. _____ 6. _____

7. Use the formula $d = rt$ to find how far each animal in the table can travel in 5 seconds.

Animal	Speed (ft/s)	Distance in 5 s (ft)
Pronghorn antelope	89.5	
Wildebeest	73.3	
Gray fox	61.6	
Wart hog	44.0	
Wild turkey	22.0	
Chicken	13.2	

8. While vacationing on the Mediterranean Sea, Angie recorded the temperature several times during a 24-hour period. She used a thermometer in the lobby of her hotel. It was a beautiful day. Use the formula $F = 1.8C + 32$ to change the temperatures Angie recorded from Celsius to Fahrenheit.

Time	Temperature (°C)	Temperature (°F)
4:00 A.M.	19	
8:00 A.M.	22	
12:00 P.M.	30	
4:00 P.M.	28	
8:00 P.M.	24	
12:00 A.M.	20	

Name _____ Class _____ Date _____

Practice 3-5

Solving Equations by Adding or Subtracting Decimals

Solve each equation.

1. $3.8 = n - 3.62$

2. $x - 19.7 = -17.48$

3. $12.5 = t - 3.55$

4. $k - 263.48 = -381.09$

5. $9.36 + k = 14.8$

6. $-22 = p + 13.7$

7. $y + 3.85 = 2.46$

8. $-13.8 = h + 15.603$

9. $y - 48.763 = 0$

10. $6.21 = e + (-3.48)$

11. $x + (-0.0025) = 0.0024$

12. $-58.109 = v - 47.736$

13. $x + 82.7 = 63.5$

14. $-0.08 = f + 0.07$

15. $0 = a + 27.98$

16. $117.345 + m = 200$

17. $z - 81.6 = -81.6$

18. $5.4 = t + (-6.1)$

19. $-4.095 + b = 18.665$

20. $4.87 = n + 0.87$

Use mental math to solve each equation.

21. $k + 23.7 = 23.7$

22. $5.63 = n + 1.63$

23. $x - 3.2 = 4.1$

24. $p - 0.7 = 9.3$

25. $6.75 + c = 12.95$

26. $-1.09 = j - 4.99$

Name _____ Class _____ Date _____

Practice 3-6

Solving Equations by Multiplying or Dividing Decimals

Use mental math to solve each equation.

1. $0.7h = 4.2$ _____
2. $\frac{x}{2.5} = -3$ _____
3. $38.7 = -100k$ _____
4. $-45.6e = -4.56$ _____

Solve each equation.

5. $\frac{p}{2.9} = 0.55$ _____
6. $9.1 = \frac{x}{-0.7}$ _____
7. $-6.4 = \frac{y}{8.5}$ _____
8. $\frac{k}{-1.2} = -0.07$ _____
9. $277.4 = \frac{n}{3.5}$ _____
10. $\frac{e}{-0.76} = 2{,}809$ _____
11. $\frac{a}{27} = -32.3$ _____
12. $\frac{p}{-1.52} = -3{,}600$ _____
13. $-9k = 2.34$ _____
14. $-12.42 = 0.03p$ _____
15. $-7.2y = 61.2$ _____
16. $-0.1035 = 0.23n$ _____
17. $1.5m = 3.03$ _____
18. $-0.007h = 0.2002$ _____
19. $8.13t = -100.812$ _____
20. $0.546 = 0.42y$ _____

Write an equation for each sentence. Solve for the variable.

21. The opposite of seventy-five hundredths times some number n equals twenty-four thousandths. Find the value of n.

_____

22. A number n divided by -3.88 equals negative two thousand. Find the value of n.

_____

23. Four hundredths times some number n equals thirty-three and four tenths. Find the value of n.

_____

24. The product of some number n and -0.26 equals 169.39. Find the value of n.

_____

Name _____ Class _____ Date _____

Practice 3-7

Using the Metric System

Write the metric unit that makes each statement true.

1. 7.84 cm = 78.4 _____
2. 423 m = 0.423 _____
3. 2.8 m = 280 _____
4. 6.5 km = 650,000 _____

Complete each statement.

5. 3.4 cm = _____ mm
6. 197.5 cm = _____ m
7. 7 L = _____ mL
8. 5,247 mg = _____ g
9. 87 g = _____ kg
10. 9,246 mL = _____ L

Choose a reasonable estimate. Explain your choice.

11. the amount of water a cup would hold: 250 mL 250 L

_____

12. the mass of a bag of apples: 2 g 2 kg

_____

13. the height of your kitchen table: 68 cm 68 m

_____

Choose an appropriate metric unit. Explain your choice.

14. distance between two cities

_____

15. the mass of a pencil

_____

16. the capacity of an automobile's gas tank

_____

17. One Olympic event is the 1,500-meter run. How many kilometers is this?

_____

18. A fish pond holds 2,500 liters of water. How many kiloliters is this?

_____

Name _____ Class _____ Date _____

Practice 3-8

Act It Out

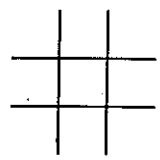
Solve by acting out the problem.

1. A house-number manufacturer sold numbers to retail stores for $.09 per digit. A hardware store bought enough digits for two of every house number from 1 to 999. How many digits did the store purchase for house numbers:

   a. 1–9 _____ **b.** 10–99 _____ **c.** 100–999 _____

   d. Find the total cost of the house numbers. _____

2. A tic-tac-toe diagram uses 2 vertical lines and 2 horizontal lines to create 9 spaces. How many spaces can you create using:



   a. 1 vertical line and 1 horizontal line _____

   b. 2 vertical lines and 1 horizontal line _____

   c. 3 vertical lines and 3 horizontal lines _____

   d. 4 vertical lines and 5 horizontal lines _____

   e. 17 vertical lines and 29 horizontal lines _____

3. Each side of each triangle in the figure has length 1 cm. The perimeter (the distance around) the first triangle is 3 cm. Find the perimeter of the figure formed by connecting:

   a. 2 triangles _____ **b.** 3 triangles _____

   c. 4 triangles _____ **d.** 50 triangles _____

Solve using any strategy.

4. At the inauguration, the President was honored with a 21-gun salute. The report from each gunshot lasted 1 s. Four seconds elapsed between shots. How long did the salute last?

   _____

5. Bernie began building a model airplane on day 7 of his summer vacation and finished building it on day 65. He worked on the plane each day. How many days did it take?

   _____

Chapter 3 Answers

Practice 3-1

1. 14.9 **2.** 1,030 **3.** 10.1 **4.** $15.50 **5.** $66 **6.** 13.6 **7.** $30 **8.** 36 **9.** 160 **10.** 6 **11.** 40 **12.** 16 **13.** 180 **14.** $220 **15.** 500 **16.** 19.5 **17.** 6.7 **18.** 52.2 **19.** 1 **20.** 348.51 **21.** 450, clustering **22.** 14, rounding; 14.1, front-end **23.** $4, clustering **24.** 50, rounding; 58, front-end **25.** 0.09, rounding; 0.081, front-end

Practice 3-2

1. no; 1800 **2.** no; 5 **3.** yes **4.** yes **5.** no; −2.4 **6.** no; 80 **7.** yes **8.** no; 20 **9.** no; 12 **10.** yes **11.** 54 **12.** 55 **13.** 600 **14.** 35 **15.** 1500 **16.** 280 **17.** 4 **18.** 5 **19.** 6 **20.** 6 **21.** 15 **22.** 3 **23.** $15 **24.** No, $6.85 \approx 7$; the total should be less than $3 \cdot 7 = \$21$. **25.** $5

Practice 3-3

1.a. 8.8, 8.85, 8.9 **b.** Answers may vary. Sample: The median; the mean is affected by the outlier, and the mode is next to the highest score. **c.** This eliminates scores that are not representative of the majority. **2.** 8.5, 8.5, 9, 15 **3.** 51.4, 60.5, none, none **4.** 5.2, 5.1, 4.9, none **5.** 232.4, 234, 234 and 271, 155 **6.** 3, 3, 3, none **7.** 15,103.4 ft **8.** 14,911 ft **9.** Mont Blanc is over 500 ft higher than Monte Rosa.

Practice 3-4

1. 27 m **2.** 13 ft **3.** 35.2 cm **4.** 40.5 sq m **5.** 6.76 sq ft **6.** 60.63 sq cm **7.** 447.5, 366.5, 308, 220, 110, 66 **8.** 66.2, 71.6, 86, 82.4, 75.2, 68

Practice 3-5

1. $n = 7.42$ **2.** $x = 2.22$ **3.** $t = 16.05$ **4.** $k = -117.61$ **5.** $k = 5.44$ **6.** $p = -35.7$ **7.** $y = -1.39$ **8.** $h = -29.403$ **9.** $y = 48.763$ **10.** $e = 9.69$ **11.** $x = 0.0049$ **12.** $v = -10.373$ **13.** $x = -19.2$ **14.** $f = -0.15$ **15.** $a = -27.98$ **16.** $m = 82.655$ **17.** $z = 0$ **18.** $t = 11.5$ **19.** $b = 22.76$ **20.** $n = 4$ **21.** $k = 0$ **22.** $n = 4$ **23.** $x = 7.3$ **24.** $p = 10$ **25.** $c = 6.2$ **26.** $j = 3.9$

Practice 3-6

1. $h = 6$ **2.** $x = -7.5$ **3.** $k = -0.387$ **4.** $e = 0.1$ **5.** $p = 1.595$ **6.** $x = -6.37$ **7.** $y = -54.4$ **8.** $k = 0.084$ **9.** $n = 970.9$ **10.** $e = -2{,}134.84$ **11.** $a = -872.1$ **12.** $p = 5{,}472$ **13.** $k = -0.26$ **14.** $p = -414$ **15.** $y = -8.5$ **16.** $n = -0.45$ **17.** $m = 2.02$ **18.** $h = -28.6$ **19.** $t = -12.4$ **20.** $y = 1.3$ **21.** $-0.75n = 0.024$; $n = -0.032$ **22.** $\frac{n}{-3.88} = -2{,}000$; $n = 7{,}760$ **23.** $0.04n = 33.4$; $n = 835$ **24.** $-0.26n = 169.39$; $n = -651.5$

Practice 3-7

1. mm **2.** km **3.** cm **4.** cm **5.** 34 **6.** 1.975 **7.** 7,000 **8.** 5.247 **9.** 0.087 **10.** 9.246 **11.** 250 mL; A cup would hold less than a quart. **12.** 2 kg; A bag of apples weighs more than this math book. **13.** 68 cm; The height is less than a yard. **14.** Kilometer; cities are usually miles apart. **15.** Gram; a pencil weighs a little more than a paper clip. **16.** Liters; a tank usually holds between 10 and 20 gallons. **17.** 1.5 **18.** 2.5

Practice 3-8

1.a. 18 **b.** 360 **c.** 5,400 **d.** $520.02 **2.a.** 4 **b.** 6 **c.** 16 **d.** 30 **e.** 540 **3.a.** 4 cm **b.** 5 cm **c.** 6 cm **d.** 52 cm **4.** 101 s **5.** 59 days

Reteaching 3-1

1. $6 + 8 = 14$ **2.** $70 - 30 = 40$ **3.** $0.5 + 0.9 = 1.4$; $11 + 1.4 = 12.4$ **4.** $7 + 8 = 15$; $50 + 15 = 65$ **5.** $1 + 7 = 8$; $20 + 8 = 28$ **6.** $0.05 + 0.08 = 0.13$; $0.5 + 0.13 = 0.63$ **7.** $4 \cdot 10 = \$40$ **8.** $3 \cdot 50 = \$150$ **9.** $3 \cdot 120 = 360$ **10.** $5 \cdot 7 = 35$

Reteaching 3-2

Answers may vary. Samples are given.
1. $16 \div 8 = 2$ **2.** $150 \div 0.5 = 300$ **3.** $-480 \div 80 = -6$ **4.** $12 \div 3 = 4$ **5.** $550 \div 50 = 11$ **6.** $-10 \div (-2) = 5$ **7.** $6.4 \div (-0.8) = -8$ **8.** $-30 \div 0.6 = -50$ **9.** $320 \div (-4) = -80$ **10.** $81 \div 9 = 9$ **11.** $-60 \div 15 = -4$ **12.** $24 \div 6 = 4$ **13.** $120 \div 40 = 3$ **14.** $1.5 \div 0.3 = 5$ **15.** $6{,}300 \div (-70) = -90$

Reteaching 3-3

1. 14.5, 14.45, none **2.** 5.6, 6, 7 **3.** 38.8, 37, none **4.** 2.0, 1.85, 1.8 and 2.6 **5.** 803.6 ft **6.** 802 ft **7.** None

Reteaching 3-4

1. 4, 7.2, 39.2°F **2.** 40, 72, 104°F **3.** 22, 39.6, 71.6°F **4.** 35, 63, 95°F **5.** −6, −10.8, 21.2°F **6.** −24, −43.2, −11.2°F **7.** 68, 36, 20°C **8.** 17.6, −14.4, −8°C **9.** 5, −27, −15°C **10.** 57.2, 25.2, 14°C **11.** 32, 0, 0°C **12.** 212, 180, 100°C

Reteaching 3-5

1. −13.15 **2.** 7.9 **3.** 115.3 **4.** −59.5 **5.** −36.1 **6.** 5.5 **7.** −44.4 **8.** 274.3

Reteaching 3-6

1. −0.61 **2.** 3.2 **3.** 0.378 **4.** −0.118 **5.** 0.2 **6.** −46.74 **7.** 12.462 **8.** −3.5

Reteaching 3-7

1. 6,900 **2.** 56.2 **3.** 5.346 **4.** 0.246 **5.** 8.9 **6.** 4,730 **7.** 9,400 **8.** 0.29 **9.** 2,100 **10.** 165 **11.** 37,000 **12.** 0.0875 **13.** 0.797 **14.** 175,000 **15.** 3.926 **16.** 710 **17.** 0.09836 **18.** 17,900

Reteaching 3-8

1. 3, 4, 14; $350 **2.** 9, 9; 90,180; 326, 978; 1,167 digits **3.** 12

Enrichment 3-1

1. 13 **2.** 92 **3.** 169 **4.** 39 **5.** 63 **6.** 205 **7.** 3,896 **8.** 2,886 **9.** 2,027 **10.** 9 **11.** 22 **12.** 79 **13.** C8 **14.** BF **15.** 6A5

Enrichment 3-2

1. 371 + 258 = 629 **2.** 5678 − 3294 = 2384 **3.** 3722 + 5683 = 9405 **4.** 19.4 × 38.6 = 748.84 **5.** 5.12 × 6.93 = 35.4816 **6.** 20.677 ÷ 7.13 = 2.9

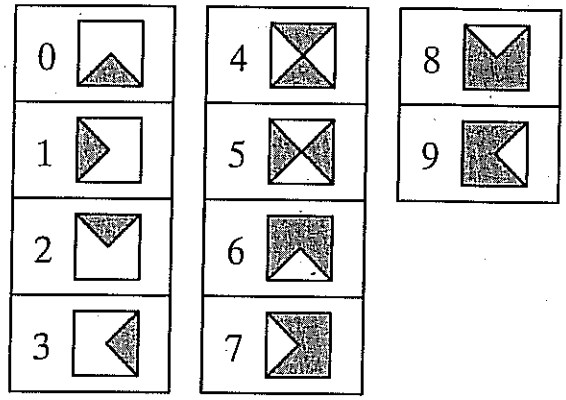
Enrichment 3-3

1. 95 **2.** 6 **3.** 82.7 **4.** 17.4 **5.** 35 **6.** 27 **7.** 32, 37 **8.** 1, 1, 4, 4, 5

Enrichment 3-4

1. 9:06 A.M. **2.** 16 mi; 9:26 A.M. **3.** 42 mi/h; 9:51 A.M. **4.** 36 mi; 10:31 A.M. **5.** 34.5 mi **6.** 128 mi; 2.77 h; 46.21 mi/h

Enrichment 3-5



Enrichment 3-6

1.a. 5 and 8 **b.** 74.1 **2.** 72 **3.** 45.9 **4.** 140 **5.** Back $1\frac{1}{2}$ somersault $2\frac{1}{2}$ twist **6.** 2.5 or greater

Enrichment 3-7

1. 100 **2.** 100; 1,000,000; 1,000,000,000,000 **3.** 1; 10,000; 10,000,000,000 **4.** 0.0001; 1; 1,000,000 **5.** 200 **6.** 340 **7.** 5,000,000 **8.** 7,450,000 **9.** 68,400,000 **10.** 476,900,000,000,000 **11.** 84,000 **12.** 500,000 **13.** 0.0009 **14.** 61,000,000,000

Enrichment 3-8

1. Each distance is twice the previous distance. **2.** 0.2 mi, 0.4 mi, 0.8 mi, 1.6 mi, 3.2 mi, 6.4 mi **3.** 1 h, 2 h, 4 h, 8 h, 16 h, 32 h **4.** 1 h, 3 h, 7 h, 15 h, 31 h, 63 h **5.** 1, 3, 7, 15 **6.** 1,023 h

✔ Checkpoint Quiz 1

1. 17.93 **2.** 0.5 **3.** 6,329 **4.** 27 **5.** −1 **6.** 6 **7.** $4.06, $3.01, none **8.** C

✔ Checkpoint Quiz 2

1. $n = 2.6$ **2.** $y = 320$ **3.** $h = 304.8$ **4.** $d = 15.12$ **5.** 340 g; A stapler weighs less than a math book. **6.** 0.084 **7.** 0.574 **8.** 4,600 **9.** 10.924 km

Chapter 3 Test Form A

1. D **2.** H **3.** B **4.** F **5.** C **6.** J **7.** C **8.** $y = 17.22$ **9.** $x = 1.37$ **10.** $n = 3.6$