

Chapter

8

Decimals

Practice 1 Understanding Thousandths

Write the decimal shown in each place-value chart.

Example

Ones	Tenths	Hundredths	Thousandths
	● ●	○ ○ ○	○ ○ ○ ○ ○ ○ ○

0.237

1.

Ones	Tenths	Hundredths	Thousandths
○ ○ ○ ○		○ ○ ○ ○ ○	○ ○ ○ ○ ○

4.055

2.

Ones	Tenths	Hundredths	Thousandths
○ ○ ○ ○ ○ ○			○ ○ ○ ○ ○ ○ ○ ○ ○

6.009

Write the decimal shown in the place-value chart.

3.

Ones	Tenths	Hundredths	Thousandths
$\begin{matrix} \circ & \circ \\ \circ & \circ \\ \circ & \end{matrix}$	$\begin{matrix} \circ & \circ \end{matrix}$	$\begin{matrix} \circ \end{matrix}$	

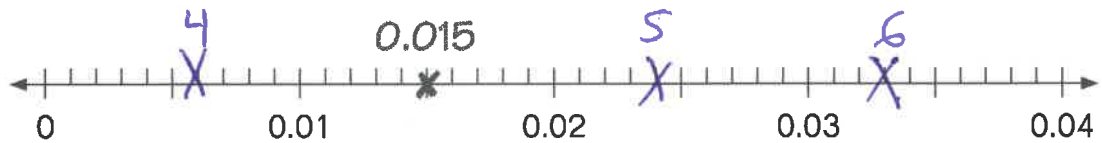
5.21

Mark X to show where each decimal is located.

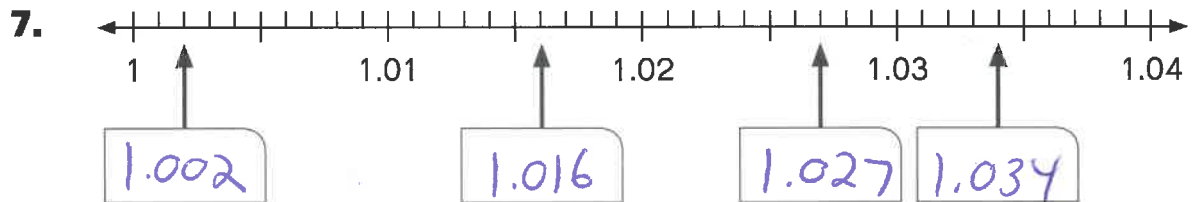
4. 0.006

5. 0.024

6. 0.033



Write the decimal shown by each arrow.



Complete.

8. 4 hundredths = 40 thousandths

9. 8 tenths 5 hundredths = 850 thousandths

10. 20 thousandths = 2 hundredths

11. 125 thousandths = 1 tenth 25 thousandths

Name: _____

Date: _____

Complete.

12. $0.126 = 1$ tenth 2 hundredths 6 thousandths

13. $0.352 = 3$ tenths 5 hundredths 2 thousandths

Write the equivalent decimal.

14. 7 thousandths = .007

15. 19 thousandths = .019

16. 235 thousandths = .235

17. 300 thousandths = .300

Write each fraction as a decimal.

18. $\frac{13}{1000} = \underline{.013}$

19. $\frac{55}{1000} = \underline{.055}$

20. $\frac{228}{1000} = \underline{.228}$

21. $\frac{430}{1000} = \underline{.430}$

Write each mixed number as a decimal.

22. $2\frac{3}{1000} = \underline{2.003}$

23. $6\frac{61}{1000} = \underline{6.061}$

24. $7\frac{107}{1000} = \underline{7.107}$

25. $8\frac{240}{1000} = \underline{8.240}$

Write each improper fraction as a decimal.

26. $\frac{1005}{1000} = \underline{1.005}$

27. $\frac{1013}{1000} = \underline{1.013}$

28. $\frac{2341}{1000} = \underline{2.341}$

29. $\frac{3450}{1000} = \underline{3.450}$

Complete.

30. $0.014 = \underline{14}$ thousandths

31. $0.178 = \underline{178}$ thousandths

32. $0.76 = \underline{760}$ thousandths

33. $1.035 = 1$ one and $\underline{35}$ thousandths

1.234 can be written in expanded form as $1 + \frac{2}{10} + \frac{3}{100} + \frac{4}{1000}$.
Write each decimal in expanded notation.

34. $4.153 = \boxed{4} + \boxed{\frac{1}{10}} + \boxed{\frac{5}{100}} + \boxed{\frac{3}{1000}}$

35. $8.381 = \boxed{8} + \boxed{\frac{3}{10}} + \boxed{\frac{8}{100}} + \boxed{\frac{1}{1000}}$

9.876 can be written in expanded form as $9 + 0.8 + 0.07 + 0.006$.
Write each decimal in expanded notation.

36. $6.426 = \underline{\frac{6}{3}} + \underline{.4} + \underline{.02} + \underline{.006}$

37. $3.642 = \underline{3} + \underline{.6} + \underline{.04} + \underline{.002}$

Complete.

In 5.074,

38. the digit 4 is in the thousandths place.

39. the value of the digit 7 is .07.

40. the digit 0 is in the tenths place.

41. the digit 5 stands for 5 ones.

Name: _____

Date: _____

Practice 2 Comparing and Rounding Decimals

Compare the decimals in each place-value chart.

Fill in the blanks. Write $>$ or $<$ in the \bigcirc .

Example

Ones	Tenths	Hundredths	Thousandths
0	0	2	
0	0	1	5

0.02 is greater than 0.015.

0.02 \bigcirc 0.015

1.

Ones	Tenths	Hundredths	Thousandths
0	3	0	8
0	2	9	

.29 is less than .308.

.29 \bigcirc .308

2.

Ones	Tenths	Hundredths	Thousandths
4	0	9	1
4	1	9	

4.091 is less than 4.19.

4.091 \bigcirc 4.19

Write the greater decimal.

3. 11.6 or 21.8 21.8
4. 10.55 or 10.05 10.55
5. 20.07 or 20.01 20.07
6. 100.202 or 100.212 100.212

Write >, <, or = in each \bigcirc .

7. 3.7 \bigcirc 0.370
8. 0.150 \bigcirc 0.51
9. 0.205 \bigcirc 2.05
10. 2.3 \bigcirc 2.30

Circle the greatest decimal and underline the least.

11. 1.03, 1.3, 0.13
12. 0.5, 0.53, 0.503
13. 2.35, 2.305, 2.035
14. 8.7, 8.07, 8.701

Order the decimals from least to greatest.

Example

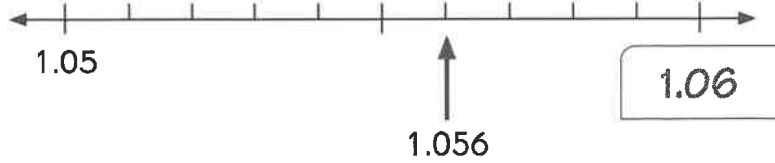
3.33, 3.03, 3.303

3.03, 3.303, 3.33

15. 5.51, 5.051, 5.501 5.051; 5.501; 5.51
16. 4, 4.01, 4.001 4; 4.001; 4.01
17. 0.023, 0.203, 0.230 .023; .203; .230

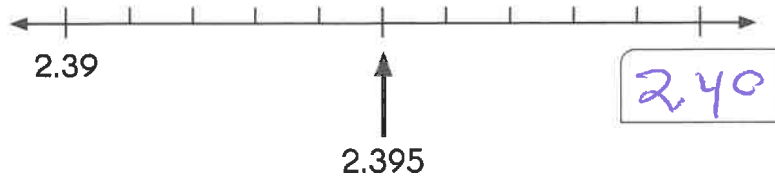
Write the missing decimal in each box. Round the given decimal to the nearest hundredth.

18.



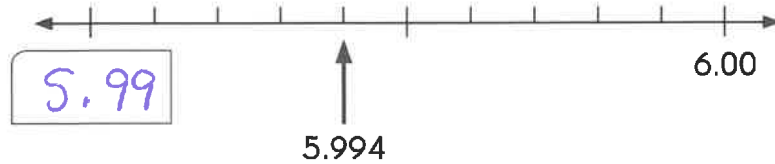
1.056 rounded to the nearest hundredth is 1.06.

19.



2.395 rounded to the nearest hundredth is 2.40.

20.



5.994 rounded to the nearest hundredth is 5.99.

Fill in the blanks.

21.

The mass of a sewing needle is 0.585 gram.
Round the mass to the nearest hundredth of a gram.

0.585 g rounds to .59g.

22.

The width of a pinhead is 0.098 centimeter.
Round the width to two decimal places.

.098 rounds to .10.

23.

1 centimeter is equal to 0.394 inches.
Round 0.394 inches to the nearest hundredth of an inch.

.394 rounds to .39.

Round each decimal to the nearest whole number, nearest tenth, and nearest hundredth.

24.

Decimal	Rounded to the Nearest		
	Whole Number	Tenth	Hundredth
1.049	1	1.0	1.05
3.753	4	3.8	3.75
2.199	2	2.2	2.20

Fill in the blanks.

- 25.** A decimal rounded to the nearest tenth is 2.5.
Write two decimals that can be rounded to 2.5.

2.49 and 2.51

- 26.** A decimal rounded to the nearest hundredth is 4.09.
Write two decimals that can be rounded to 4.09.

4.085 and 4.094

- 27.** A decimal rounded to the nearest hundredth is 6.32.
This decimal is greater than 6.32.

What could this decimal be? 6.324

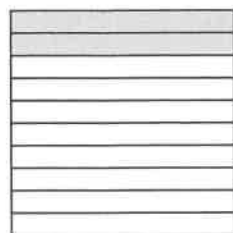
- 28.** A decimal rounded to the nearest hundredth is 7.01.
This decimal is less than 7.01.

What could this decimal be? 7.009

Practice 3 Rewriting Decimals as Fractions and Mixed Numbers

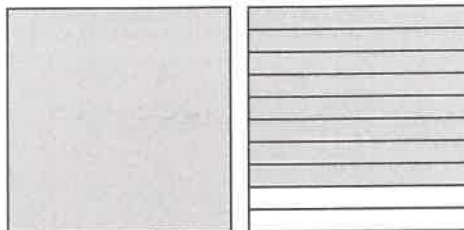
Rewrite each decimal as a fraction or mixed number in simplest form.

Example



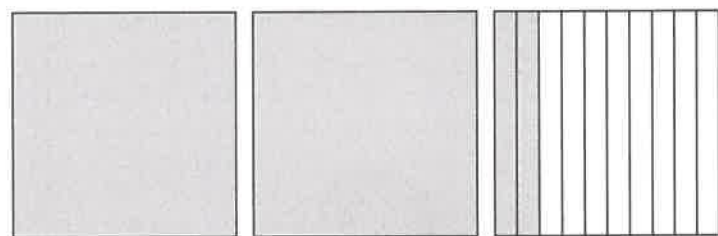
$$0.2 = \frac{1}{5}$$

1.



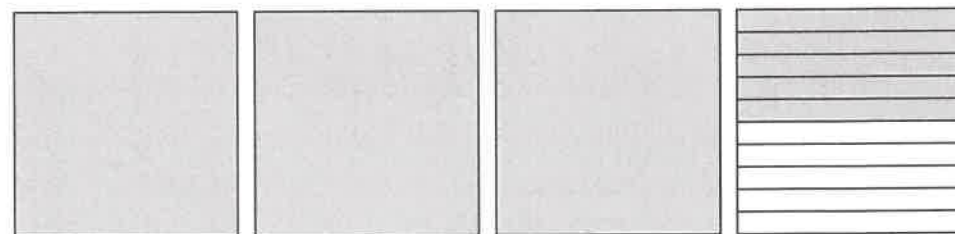
$$1.8 = 1\frac{4}{5}$$

2.



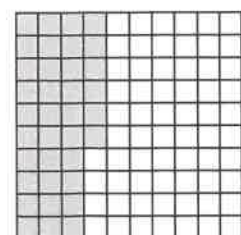
$$2.2 = 2\frac{1}{5}$$

3.



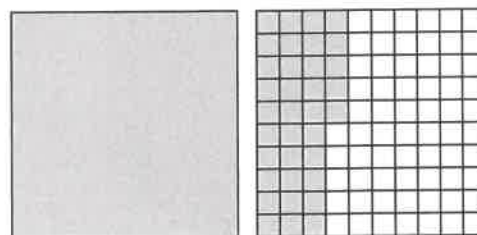
$$3.5 = 3\frac{1}{2}$$

4.



$$0.36 = \frac{9}{25}$$

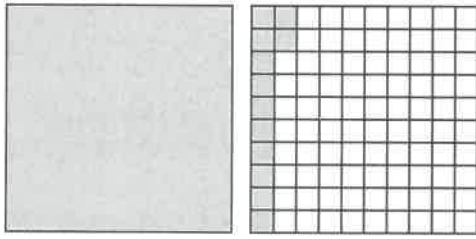
5.



$$1.35 = 1\frac{7}{20}$$

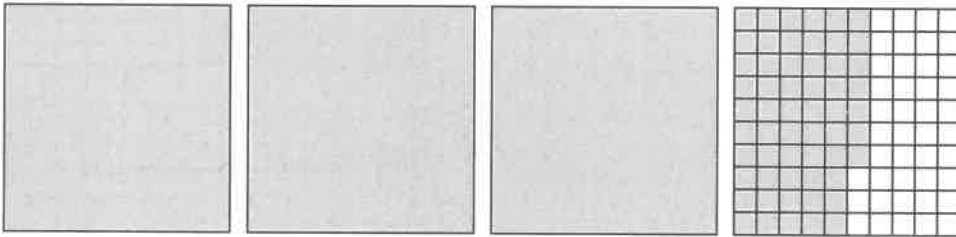
Rewrite each decimal as a fraction or mixed number in simplest form.

6.



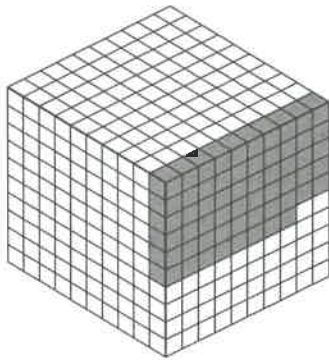
$$1.12 = 1 \frac{3}{25}$$

7.



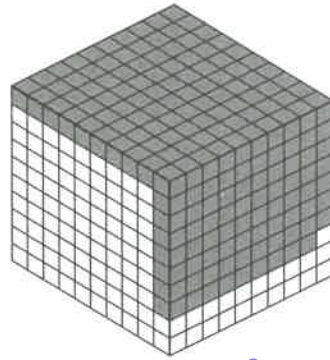
$$3.57 = 3 \frac{57}{100}$$

8.



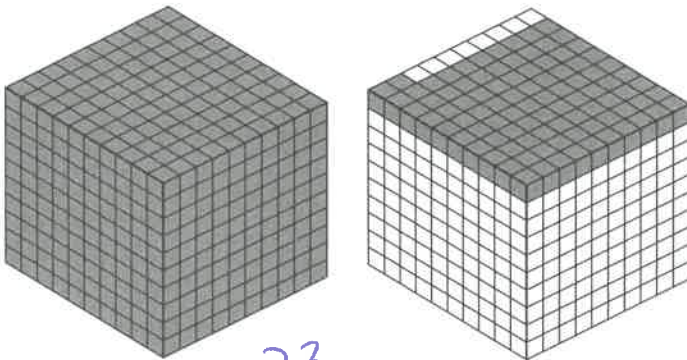
$$0.058 = \frac{29}{500}$$

9.



$$0.169 = \frac{169}{1000}$$

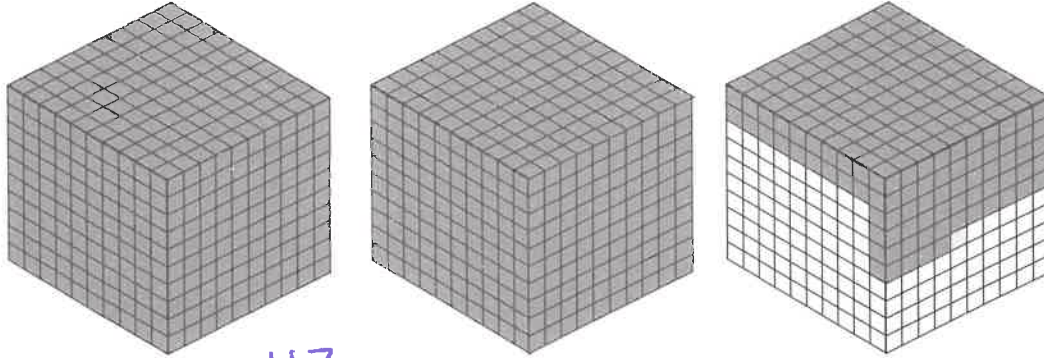
10.



$$1.092 = 1 \frac{23}{250}$$

Rewrite the decimal as a mixed number in simplest form.

11.



$$2.235 = 2 \frac{47}{200}$$

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

12. 7.3 $7 \frac{3}{10}$

13. 26.9 $26 \frac{9}{10}$

14. 0.59 $\frac{59}{100}$

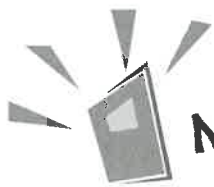
15. 15.82 $15 \frac{41}{50}$

16. 1.28 $1 \frac{7}{25}$

17. 4.109 $4 \frac{109}{1000}$

18. 0.136 $\frac{17}{125}$

19. 3.602 $3 \frac{301}{500}$



Math Journal

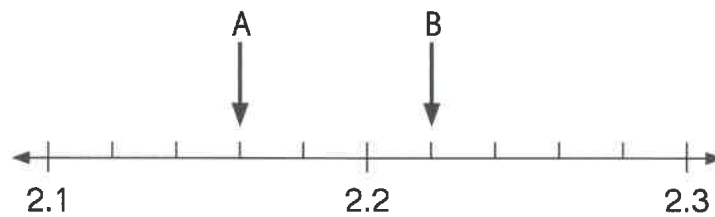
1. Explain why 1.8, 1.80, and 1.800 have the same value.

$$1.8 = 1 \frac{8}{10}$$

$$1.80 = 1 \frac{80}{100} = 1 \frac{8}{10}$$

$$1.800 = 1 \frac{800}{1000} = 1 \frac{8}{10}$$

2. Howard does not know how to find the values of A and B on the number line. Write the steps Howard should use to find these values.



Find the value of each mark on the number line first.





Put On Your Thinking Cap!



Challenging Practice

Solve.

1. You are given two numbers, 3.987 and 70.140.
- Round each number to the nearest tenth. *4.0; 70.1*
 - Round each number to the nearest hundredth. *3.99; 70.14*
 - Find the difference between your rounded answers for 3.987. *0.01*
 - Find the difference between your rounded answers for 70.140. *0.04*
 - Are your answers in Exercises **a** and **b** the same? Explain why or why not. *NO*

Complete.

2. $4.129 = 4 + \frac{1}{10} + \frac{29}{\boxed{1000}}$

3. $2.075 = 2 + \frac{\boxed{70}}{1000} + \frac{5}{\boxed{1000}}$

4. $3.157 = \frac{\boxed{3150}}{1000} + \frac{7}{1000}$



Put On Your Thinking Cap!



Problem Solving

Solve. Show your work.

1. Kimberly has 3.25 kilograms of flour in a container. She adds 45 grams of flour to the container. How many kilograms of flour does she have now?

$$3.25 \text{ kg} = 3,250 \text{ g}$$

$$3,250 + 45 = 3,295$$

$$3,295 \text{ g} = 3.295 \text{ kg}$$

2. The weight of four objects are $3\frac{1}{5}$ pounds, $3\frac{39}{1000}$ pounds, $3\frac{99}{100}$ pounds and $3\frac{52}{10}$ pounds. Arrange the weights in order from least to greatest.

$$3\frac{39}{1000} \text{ lb}, 3\frac{1}{5}, 3\frac{99}{100}, 3\frac{52}{10}$$