

SAMPLE PAGES  
from  
The Competitive Edge  
  
Passing the  
EOG 7 in Mathematics

❖ *SECOND EDITION* ❖

*by Jane Hereford*

*Chapter 2 is enclosed  
to illustrate the quantity  
and quality of problems in  
this workbook.*

**CPC**

CONTEMPORARY PUBLISHING COMPANY OF RALEIGH, INC.

6001-101 Chapel Hill Road, Raleigh, NC 27607 • (919) 851-8221

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 DECIMALS

Decimals represent part of a whole number. Decimals are expressed as tenths, hundredths, thousandths, etc.

## PLACE VALUE CHART

24	.	4	7	8	9
<i>Whole number</i>	<i>Decimal point</i>	<i>tenths</i>	<i>hundredths</i>	<i>thousandths</i>	<i>ten thousandths</i>

## PRACTICE

Write the place value of each underlined digit.

1. 86.812 \_\_\_\_\_      7. 703.5 \_\_\_\_\_      13. .425 \_\_\_\_\_

2. 6.3303 \_\_\_\_\_      8. 391.96 \_\_\_\_\_      14. .1734 \_\_\_\_\_

3. .1925 \_\_\_\_\_      9. 403.2177 \_\_\_\_\_      15. .2167 \_\_\_\_\_

4. 9.07 \_\_\_\_\_      10. 81.9617 \_\_\_\_\_      16. 3.23 \_\_\_\_\_

5. 286.776 \_\_\_\_\_      11. 20.1242 \_\_\_\_\_      17. 441.1 \_\_\_\_\_

6. 21.73 \_\_\_\_\_      12. .3638 \_\_\_\_\_      18. 28.3126 \_\_\_\_\_

## ➤ *Reading Decimals*

To read decimals, say the whole number, say “and” for the decimal point, say the number to the right of the decimal, and say the place value of the last digit. If there is no whole number, read the number and say the place value of the last digit.

### EXAMPLES

27.24

Twenty-seven and twenty-four hundredths

.828

Eight hundred twenty-eight thousandths

### PRACTICE

Write the numbers in words.

1. 312.8123

11. 5.8927

2. .345

12. 13.367

3. .18

13. 3.31

4. 15.137

14. .136

5. 2.1

15. 10.1376

6. 800.07

16. .3

7. 3.004

17. 207.89

8. .0006

18. 45.6

9. 12.483

19. .3086

10. 50.13

20. 100.387

## ➤ *Ordering and Comparing*

To order and compare decimals, they must have the same number of digits behind the decimal point. Add zeroes when necessary.

### EXAMPLES

Put  $>$  (greater than),  $<$  (less than), or  $=$  (equal) in blanks.

$$24 \underline{\quad} 57 \quad 24 \underline{<} 57$$
$$4.81 \underline{\quad} 4.9 \quad 4.81 \underline{<} 4.90$$

Write these numbers in order from largest to smallest.

2.6, 2.53, 2.512, 2.467, 2.5  
2.600, 2.530, 2.512, 2.500, 2.467

### PRACTICE

Use  $>$ ,  $<$ , or  $=$  to compare the following numbers.

- |                                  |                                     |                                  |
|----------------------------------|-------------------------------------|----------------------------------|
| 1. 8.7 $\underline{\quad}$ 8.72  | 5. .112 $\underline{\quad}$ .1189   | 9. 7.51 $\underline{\quad}$ 7.51 |
| 2. 3.5 $\underline{\quad}$ 3.412 | 6. 61.97 $\underline{\quad}$ 61.970 | 10. 9.93 $\underline{\quad}$ 9.9 |
| 3. .45 $\underline{\quad}$ .137  | 7. 1.675 $\underline{\quad}$ 1.69   | 11. .57 $\underline{\quad}$ .5   |
| 4. .376 $\underline{\quad}$ .37  | 8. .786 $\underline{\quad}$ .7      | 12. 1.25 $\underline{\quad}$ 1.3 |

Order the following numbers from smallest to largest.

- |   |       |
|---|-------|
| 13. 2.56, 3.56, 2.6, 3.451, 2.874       | _____ |
| 14. 10.43, 10.421, 10.563, 10.41, 10.62 | _____ |
| 15. 24.5, 24.5632, 24.563, 24.51, 24.37 | _____ |
| 16. 28.6, 28.16, 28.543, 28.2, 28.762   | _____ |
| 17. .567, .56, .5671, .5366, .512       | _____ |
| 18. 2.9, 2.876, 2.93, 2.84, 2.873       | _____ |
| 19. 1.63, 1.4, 1.82, 1.9, 1.034         | _____ |
| 20. 3.5, 3.45, 3.124, 3.455, 3.51       | _____ |

## ➤ Rounding Decimals

You can round decimals to *any* place value.

To round to the nearest tenth, hundredth, thousandth, etc., you must find the number in that place value first. Second, find the number to the right of that place value number. (0–4 stays the same. 5–9 goes up 1.)

### EXAMPLES

Round to the nearest tenth.

$$.651 \rightarrow \underline{.6}51 \rightarrow .7$$

6 is in the tenths place. The 5 is the number to the right of the tenths place. The 5 makes the 6 in the tenths place go up one. Drop the numbers behind the line.

Round to the nearest hundredth.

$$5.9605 \rightarrow 5.9\underline{6}05 \rightarrow 5.96$$

6 is in the hundredths place. The 0 is the number to the right of the hundredths place. The 0 makes the 6 in the hundredths place stay the same. Drop the numbers after the line.

### PRACTICE

Round to the nearest tenth.

1. 231.909 \_\_\_\_\_

5. .913 \_\_\_\_\_

2. 14.7713 \_\_\_\_\_

6. .39 \_\_\_\_\_

3. 10.417 \_\_\_\_\_

7. 21.04 \_\_\_\_\_

4. 88.991 \_\_\_\_\_

8. 3.8657 \_\_\_\_\_

Round to the nearest hundredth.

9. 81.5569 \_\_\_\_\_

13. 624.9073 \_\_\_\_\_

10. 100.1712 \_\_\_\_\_

14. 30.045 \_\_\_\_\_

11. 9.113 \_\_\_\_\_

15. 8.999 \_\_\_\_\_

12. 63.732 \_\_\_\_\_

16. 271.863 \_\_\_\_\_

Round to the nearest thousandth.

17. .9999 \_\_\_\_\_

21. .9099 \_\_\_\_\_

18. 90.7342 \_\_\_\_\_

22. 10.1734 \_\_\_\_\_

19. 177.7879 \_\_\_\_\_

23. 83.3417 \_\_\_\_\_

20. .4179 \_\_\_\_\_

24. .8678 \_\_\_\_\_

## ➤ Adding and Subtracting Decimals

Copy problems with decimal points lined up. Whole numbers (7, 8, 9 . . .) have an imaginary decimal after them. Add zeroes as needed. Add or subtract.

### EXAMPLES

$$23.83 + 4.7 + 8.623 =$$

$$\begin{array}{r} \phantom{0}^1 \phantom{0}^2 \\ 23.830 \\ + 4.700 \\ + 8.623 \\ \hline 37.153 \end{array}$$

$$6 - 3.724 =$$

$$\begin{array}{r} \phantom{0}^5 \phantom{0}^9 \phantom{0}^9 \phantom{0}^{10} \\ 6.000 \\ - 3.724 \\ \hline 2.276 \end{array}$$

### PRACTICE

1.  $.8 - .3128$

Add or subtract.  
7.  $4.001 - 2$

13.  $86.9 + 299.7 + 345.392$

2.  $.77 - .4417$

8.  $34 - 8.114$

14.  $5.175 + 36.4 + 3.214$

3.  $49.31 - 2.8$

9.  $201.93 + 35.8 + 57.17 + 20$

15.  $145.9 + 200 + 34.82$

4.  $25.67 - 4.8912$

10.  $3 + 4 + 12.51 + 8.19 + 17.1$

16.  $17.12 + 3.345 + 2.5$

5.  $337.4 - 74.899$

11.  $28.821 + 305.7 + 8.9$

17.  $21.86 + 40 + 314.6$

6.  $39.7 - 15.186$

12.  $20.145 + 7 + 174.8$

18.  $8.874 + 3.7 + 2$

## ➤ *Multiplying Decimals*

Multiply decimals like whole numbers. After determining the product, count the number of decimal places in each number. That number determines how many numbers must be after the decimal point.

### EXAMPLES

$$\begin{array}{r} \overset{5}{.59} \quad (2 \text{ places}) \\ \times \underline{.16} \quad + (2 \text{ places}) \\ \hline 354 \\ + \underline{590} \\ \hline .0944 \quad (4 \text{ places}) \end{array}$$

$$\begin{array}{r} \overset{3}{36.14} \quad (2 \text{ places}) \\ \times \overset{513}{.059} \quad + (3 \text{ places}) \\ \hline 32526 \\ 180700 \\ + \underline{000000} \\ \hline 2.13226 \quad (5 \text{ places}) \end{array}$$

### PRACTICE

1.  $91.4 \times 82.5$

7.  $10.02 \times 2.06$

13.  $9.3 \times 8.7$

2.  $2.038 \times .06$

8.  $6.24 \times 2.18$

14.  $.5867 \times .21$

3.  $55.10 \times .17$

9.  $37.17 \times 45.27$

15.  $314.6 \times 8.21$

4.  $45.04 \times 3.007$

10.  $102.4 \times 6.89$

16.  $824.8 \times .193$

5.  $.007 \times .0034$

11.  $24.73 \times 9.5$

17.  $.387 \times .5$

6.  $386.2 \times 59.7$

12.  $195.7 \times 24.6$

18.  $1.89 \times .502$

## ➤ *Dividing Decimals (Whole number divisors)*

Divide decimals like whole numbers. Place the decimal point in your answer above the decimal point in the dividend.

### EXAMPLES

$$\begin{array}{r} .05 \\ 16 \overline{) .80} \\ \underline{-0} \downarrow \\ 80 \\ \underline{-80} \\ 0 \end{array}$$

$$\begin{array}{r} 03.62 \\ 5 \overline{) 18.10} \\ \underline{-0} \downarrow \downarrow \downarrow \\ 18 \downarrow \downarrow \\ \underline{-15} \downarrow \downarrow \\ 31 \downarrow \\ \underline{-30} \downarrow \\ 10 \\ \underline{-10} \\ 00 \end{array}$$

$$\begin{array}{r} 0.21 \\ 20 \overline{) 4.20} \\ \underline{-0} \downarrow \downarrow \downarrow \\ 42 \downarrow \\ \underline{-40} \downarrow \\ 20 \\ \underline{-20} \\ 00 \end{array}$$

### PRACTICE

Divide.

1.  $6.75 \div 9$

7.  $.296 \div 4$

13.  $.558 \div 93$

2.  $.390 \div 6$

8.  $8.64 \div 4$

14.  $4.384 \div 4$

3.  $304.2 \div 9$

9.  $.1581 \div 17$

15.  $.534 \div 6$

4.  $.136 \div 4$

10.  $4.984 \div 14$

16.  $.1944 \div 36$

5.  $16.92 \div 18$

11.  $6681.1 \div 71$

17.  $31.997 \div 49$

6.  $12.09 \div 3$

12.  $100.8 \div 18$

18.  $24.88 \div 4$

## ➤ *Dividing Decimals (Decimal divisors)*

Decimals cannot be divided by decimals! You must move the decimal in the divisor. If you move the decimal in the divisor, you must move the decimal the same way in the dividend. After the decimals are moved, then divide.

### EXAMPLES

$$\begin{array}{r} .8 \overline{) 8.0} \\ \hline \end{array}$$

Pass one number.

$$\begin{array}{r} 10 \\ 8 \overline{) 80} \\ \underline{-8} \downarrow \\ 00 \\ \underline{-0} \\ 0 \end{array}$$

$$\begin{array}{r} .05 \overline{) .35.5} \\ \hline \end{array}$$

Pass two numbers.

$$\begin{array}{r} 7.1 \\ 05 \overline{) 35.5} \\ \underline{-35} \downarrow \\ 05 \\ \underline{-05} \\ 00 \end{array}$$

### PRACTICE

- | Divide.               |                       |                        |
|-----------------------|-----------------------|------------------------|
| 1. $31.284 \div 2.37$ | 7. $9.12 \div .57$    | 13. $.3752 \div .67$   |
| 2. $32 \div 2.50$     | 8. $.0369 \div .009$  | 14. $.02436 \div .29$  |
| 3. $3.999 \div .43$   | 9. $.0944 \div .4$    | 15. $8.25 \div .275$   |
| 4. $2,002 \div 5.2$   | 10. $1.9 \div .05$    | 16. $443.98 \div .079$ |
| 5. $17.2 \div .04$    | 11. $1.2168 \div .39$ | 17. $3.44 \div .004$   |
| 6. $25.2 \div .42$    | 12. $93 \div 6.2$     | 18. $3.589 \div 3.7$   |

## ➤ Review

- Sally, Debby and Susan will share 3.69 feet of ribbon. How many feet of ribbon will each girl receive?
  - 1.23 feet
  - 12.3 feet
  - .813 feet
  - 81.3 feet
- Red cording will be put around each pillow. If 3.146 inches of cording is needed for each pillow, how much cording will be needed for 3.5 pillows?
  - 1,101.1 inches
  - 1.1011 inches
  - 110.11 inches
  - 11.011 inches
- Which group of numbers is in order from smallest to largest?
  - 1.5, 1.687, 1.7, 1.81, 2
  - 2, 1.81, 1.7, 1.687, 1.5
  - 1.5, 1.7, 1.81, 1.687, 2
  - 2, 1.5, 1.7, 1.81, 1.687
- Round 619.456 to the nearest tenth.
  - 619.5
  - 620.556
  - 619.556
  - 619.4
- Randy found a box of snowflake decorations. Some were broken. If each whole snowflake weighed 13.14 grams, how much did 257.8 snowflakes weigh?
  - 33,8749.2 grams
  - 3,387.492 grams
  - 33.87492 grams
  - 33,874.92 grams
- A long distance truck driver had driven 141.37 miles of the 456 miles he needed to drive. How many more miles does he have to drive to complete his trip?
  - 597.37 miles
  - 140.914 miles
  - 314.63 miles
  - 13,681 miles
- Which statement is a true statement?
  - $3.5 = 3.54$
  - $6.176 > 6.18$
  - $9.3 > 9.214$
  - $.06 < .04$
- A miner was panning for gold during the Gold Rush. On Monday he panned 57.3 ounces, on Tuesday 18 ounces, and on Wednesday 314.167 ounces. How many ounces did he pan in 3 days?
  - 389.1673 ounces
  - 389.467 ounces
  - 314,668 ounces
  - 361.747 ounces
- Reginald drove 3 miles south, 7.164 miles east, and then 87.6 miles north. How many miles did he drive?
  - 8,043 miles
  - 95.064 miles
  - 97.764 miles
  - 97.1646 miles
- 3.675 is read as \_\_\_\_\_.
  - three point six seven five
  - three thousand six hundred seventy-five
  - three and six hundred seventy-five
  - three and six hundred seventy-five thousandths
- In the number 293.781, the 8 is in what place?
  - tenths
  - thousandths
  - hundredths
  - ten thousandths

12. Which number is in the thousandths place?  
682.4175
- 7
  - 1
  - 5
  - 2
13. Each stone weighs 6.85 pounds. How much would 30 stones weigh?
- 28.7 pounds
  - 1.3 pounds
  - 152 pounds
  - 205.5 pounds
14. Ellen has a roll of ribbon 73.6 meters long. How many pieces .4 meters long could she cut from this roll?
- 18.4
  - 7.36
  - 184
  - .0054
15. A string measures 18.6 inches. A ribbon measures 27.624 inches. What expression would be used to find how much longer one is than the other?
- $18.6 + 27.627$
  - $18.6 - 27.624$
  - $18.6 \times 27.624$
  - $27.624 - 18$
16. One board is 15.1 inches wide. Another board is 11.734 inches wide. What is the difference in their widths?
- 22.834 in.
  - 3.366 in.
  - 127.5154 in.
  - 140.734 in.
17. A runner ran 15.5 kilometers in 2 hours. What was his average speed?
- 17.5 km/hr.
  - 7.75 km/hr.
  - 15.5 km/hr.
  - .775 km/hr.
18. Chris orders 6 sub sandwiches. Each sandwich costs \$1.69. What is the correct expression to find the total cost?
- $\$1.69 \times 6$
  - $\$1.69 \div 6$
  - $\$1.69 \times .6$
  - $\$1.69 + 6$
19. Frankie made purchases totaling \$157.99. Sales tax on her purchases is \$9.48. She pays \$50 to hold them on layaway. How much does she still owe on her purchases?
- \$217.47
  - \$117.47
  - \$98.51
  - \$198.516
20. Marilyn buys pens that cost \$9.95 per dozen. What is the expression to find the cost of one pen?
- $\$9.95 \times 1$
  - $\$9.95 \times 12$
  - $\$9.95 \div 12$
  - $\$9.95 - 12$
21. Charlie purchases a jacket for \$59.95, a tie for \$15, and a shirt for \$21.99. What is the total cost?
- \$72.19
  - \$71.97
  - \$96.94
  - \$2.96
22. Round 8.9341 to the nearest hundredth.
- 8.94
  - 8.934
  - 8.944
  - 8.93
23. It will take 12.04 feet of plywood to complete 4 drawers. How many feet of plywood will each drawer contain?
- 3.01 feet
  - .332 feet
  - 30.1 feet
  - 33.2 feet