

CCM6 and CCM6 +

Unit 3: Decimal Operations

2016-2017

Name _____

Teacher _____

Estimated Test Date: _____

Topic	Page #
Vocabulary of Unit 3	2
Place Value, comparing and rounding	3-8
Estimate decimal operations	9-13
Adding and subtracting decimals	14-18
Multiplying decimals	19-25
Dividing decimals	26-30
Problem-solving with decimals	31-33
Study Guide	34-36

Unit 3: Operations with Decimals

Vocabulary

Decimal: a number that has one or more digits to the right of the decimal point

Compatible numbers: numbers that are easy to divide mentally

Sum: the answer to an addition problem

Difference: the answer to a subtraction problem.

Product: the answer to a multiplication problem

Quotient: the answer to a division problem

Divisor: the number that you divide by

Dividend: the number that is divided

Place Value Chart

Number	Tens	Ones	Tenths	Hundredths	Thousandths	Ten Thousandths	Hundred Thousandths
a) 18.51875							
b) 5.256							
c) 24.1194							
d) 0.92347							
e) 35.0876							

Place Value Chart

Number	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths	Ten Thousandths	Hundred Thousandths
a) 93.21364								
b) 139.05738								
c) 8.65212								
d) 35.93539								
e) 245.20085								

Underline the Place Value

1) Underline the tens place

- (a) 45.83 (b) 378.265 (c) 10.054 (d) 3267.2 (e) 931.38

2) Underline the hundredths place

- (a) 71.032 (b) 826.48 (c) 9205.648 (d) 24.65 (e) 0.009

3) Underline the tenths place

- (a) 148.92 (b) 9.83 (c) 37.13 (d) 164.976 (e) 2.75

4) Underline the ones place

- (a) 71.236 (b) 6.5 (c) 689.2 (d) 0.27 (e) 12.43

5) Underline the hundreds place

- (a) 300.85 (b) 8421.893 (c) 941.64 (d) 1736.2 (e) 469.58

Write the Correct Comparison Symbol ($>$, $<$ or $=$) in Each Box

3.48 3.47

6.95 6.99

4.27 4.24

7.2 7.15

6.32 6.32

9.11 0.911

Which of the following decimal numbers is the greatest? Circle your choice.

0.206

2.06

0.026

0.26

Which of the following decimal numbers is the least? Circle your choice.

1.305

1.35

1.053

1.53

Which of the following decimal numbers is the greatest? Circle your choice.

15.03

15.31

13.05

15.13

Which of the following decimal numbers is the least? Circle your choice.

20.08

20.73

23.7

27.03

Why is it easier to compare decimals when you line up the decimal points?

What Did the Boy Rodent Say to the Girl Rodent?

Find your answer for the last step of each exercise in the boxes to the right. Write the letter of the exercise in this box.

34	52	45	60	6	3	21	5	14	59
----	----	----	----	---	---	----	---	----	----

- ⓐ 82.4375
1. Start with the digit in the tenths place. _____
 2. Add the digit in the tens place. _____
 3. Multiply by the digit in the ten-thousandths place. _____

- ⓔ 9.02637
1. Start with the digit in the thousandths place. _____
 2. Multiply by the digit in the hundred-thousandths place. _____
 3. Divide by the digit in the hundredths place. _____

- ⓓ 0.143825
1. Start with the digit in the millionths place. _____
 2. Subtract the digit in the tenths place. _____
 3. Multiply by the digit in the ten-thousandths place. _____
 4. Add the digit in the hundred-thousandths place. _____

- ⓗ 7,128.659
1. Start with the digit in the thousands place. _____
 2. Add the digit in the thousandths place. _____
 3. Subtract the digit in the hundreds place. _____
 4. Divide by the digit in the hundredths place. _____

- Ⓡ 4.526371
1. Start with the digit in the ten-thousandths place. _____
 2. Multiply by the digit in the hundred-thousandths place. _____
 3. Subtract the digit in the millionths place. _____
 4. Divide by the digit in the ones place. _____

- ⓖ 890.3725
1. Start with the digit in the hundredths place. _____
 2. Add the digit in the hundreds place. _____
 3. Divide by the digit in the tenths place. _____
 4. Multiply by the digit in the tens place. _____

- Ⓤ 0.0198236
1. Start with the digit in the thousandths place. _____
 2. Subtract the digit in the hundred-thousandths place. _____
 3. Multiply by the digit in the ten-thousandths place. _____
 4. Add the digit in the millionths place. _____

- Ⓟ 45.63041
1. Start with the digit in the tenths place. _____
 2. Multiply by the digit in the ones place. _____
 3. Divide by the digit in the hundredths place. _____
 4. Subtract the digit in the tens place. _____

Why Do We Remember the First Lid That Came to America'?

Write each number as a decimal and find your answer in the list to the right. Write the letter of the answer in the box containing the number of the exercise. If the answer has a ●, shade in the box instead of writing a letter in it.

1. two and seventy-six hundredths	<input type="radio"/> E 2.076
2. two and seventy-six thousandths	<input type="radio"/> A 27.006
3. two hundred seventy-six thousandths	<input type="radio"/> I 2.76
4. twenty-seven and six thousandths	<input checked="" type="radio"/> 0.276
5. three thousand eight hundred fifty-four ten-thousandths	<input type="radio"/> T 38.0054
6. three and eight hundred fifty-four ten-thousandths	<input checked="" type="radio"/> 3.0854
7. thirty-eight and five hundred four thousandths	<input type="radio"/> R 38.504
8. thirty-eight and fifty-four ten-thousandths	<input type="radio"/> O 0.3854
9. nine hundred seventy-one millionths	<input checked="" type="radio"/> 9.000071
10. nine and seventy-one millionths	<input type="radio"/> E 0.009071
11. nine and seven hundred one millionths	<input type="radio"/> S 9.000701
12. nine thousand seventy-one millionths	<input type="radio"/> A 0.000971
13. six hundred fifty-two and eight tenths	<input type="radio"/> I 0.06528
14. six thousand five hundred twenty-eight hundred-thousandths	<input checked="" type="radio"/> 650.00028
15. six hundred fifty and twenty-eight hundred-thousandths	<input type="radio"/> H 652.8
16. six hundred and five hundred twenty-eight thousandths	<input type="radio"/> C 600.528
17. four hundred ten and nine hundredths	<input type="radio"/> D 0.0419
18. four hundred nineteen ten-thousandths	<input type="radio"/> W 410.09
19. four and nineteen millionths	<input type="radio"/> S 40.019
20. forty and nineteen thousandths	<input type="radio"/> V 0.04019
21. four thousand nineteen hundred-thousandths	<input type="radio"/> R 4.000019

14	8	3	17	9	11	15	4	6	18	1	20	13	10	16	5	21	12	19	2	7
----	---	---	----	---	----	----	---	---	----	---	----	----	----	----	---	----	----	----	---	---

ROUNDING PRACTICE...this is very important!

What Did Orgo's Mother Tell Him to Do With the Seat Belt?



Do each exercise and find your answer in the adjacent answer columns. Write the letter of the exercise in the box containing the number of the answer.

Round to the nearest tenth.

- ● ● ● ● ANSWERS ● ● ● ● ●
- 7) 8.376
 - 18) 15.02499
 - 12) 0.2525252
 - 25) 691.908
 - 2) 3.1736404
 - 21) 7.98
 - 14) 129.955
 - 6) 691.8
 - 3) 8.0
 - 1) 0.4
 - 4) 8.4
 - 5) 691.9
 - 2) 15.3
 - 7) 130.0
 - 8) 15.0
 - 9) 3.2
 - 0) 129.8
 - 1) 0.3
 - 2) 8.2

Round to the nearest hundredth or nearest cent.

- ● ● ● ● ANSWERS ● ● ● ● ●
- 5) 4.0718
 - 23) 0.6666666
 - 8) 92.354009
 - 16) 0.02387
 - 27) \$5.375
 - 1) \$0.699
 - 11) \$324.4705
 - 9) 92.34
 - 2) \$5.39
 - 4) 4.07
 - 5) \$0.70
 - 6) 0.04
 - 3) 0.67
 - 7) \$324.47
 - 0) 0.02
 - 1) 0.68
 - 2) 92.35
 - 3) \$324.45
 - 4) \$5.38

Round to the nearest thousandth.

- ● ● ● ● ANSWERS ● ● ● ● ●
- 3) 2.38383
 - 10) 70.6591
 - 19) 0.4444444
 - 9) 15.20072
 - 4) 15.20027
 - 17) 816.63451
 - 6) 4.2999
 - 4) 4.297
 - 1) 2.384
 - 0) 0.446
 - 2) 15.200
 - 3) 4.300
 - 5) 816.636
 - 6) 4.297
 - 7) 3.6808
 - 8) 0.3333333
 - 9) 592.5
 - 0) 0.0727
 - 1) 0.00772
 - 2) 0.48649

Round to 1-digit accuracy.

- ● ● ● ● ANSWERS ● ● ● ● ●
- 24) 61.75
 - 15) 3.6808
 - 28) 0.3333333
 - 13) 592.5
 - 20) 0.0727
 - 26) 0.00772
 - 22) 0.48649
 - 5) 500
 - 6) 0.3
 - 7) 5
 - 8) 0.5
 - 9) 60
 - 0) 0.07
 - 1) 63
 - 2) 0.008
 - 3) 600
 - 4) 0.06
 - 5) 4
 - 6) 0.009

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Permission is given to instructors to reproduce this page for classroom use with Middle School Math with Pizzazzi (Binder B). Copyright © Wit

Two Column Notes for Estimating Decimal Operations

<p style="text-align: center;"><u>Estimation</u></p> <p style="text-align: center;">Why is estimation important?</p>	
<p style="text-align: center;">Rounding Review</p>	<p style="text-align: center;">First, locate the place value and underline it!</p> <p style="text-align: center;">Look at the number to the right:</p> <ul style="list-style-type: none"> • If _____ or higher, round _____. • If below _____, KEEP IT THE SAME! <p style="text-align: center;">Fill in zeros till you get to the decimal point.... Extra places after the decimal point, drop it!</p> <p style="text-align: center;">Round to the nearest tenth:</p> <p style="text-align: center;">1) 28.4399 2) 17.564 3) 3,135.972</p> <p style="text-align: center;">Round to the nearest hundredth:</p> <p style="text-align: center;">1) 28.4399 2) 17.564 3) 3,135.972</p> <p style="text-align: center;">Round to the nearest whole:</p> <p style="text-align: center;">1) 28.4399 2) 17.564 3) 3,135.972</p>

<p>Example Estimate by rounding:</p> <p>Addition</p> <p>$9.4 + 2.5 + 12.7$</p> <p>Multiplication</p>	<p>$9.4 + 2.5 + 12.7$</p> <p>School lunches cost \$14.25 per week. About how much would 15.5 weeks of lunches cost?</p>
--	--

Estimating Quotients	<p>ROUNDING DOESN'T ALWAYS MAKE IT EASIER!</p> <p>Use _____ numbers! (Nearby numbers that divide easily!)</p>
<p>Example</p> <p>A bowling ball has a mass of 5.61 kg. Each bowling pin has a mass of 1.57 kg. How many bowling pins are about equal to the bowling ball in mass?</p>	<p>A bowling ball has a mass of 5.61 kg. Each bowling pin has a mass of 1.57 kg. How many bowling pins are about equal to the bowling ball in mass?</p>
<p>Practice Problems</p>	
<p>Estimate the sum: 16.2 + 3.5 + 14.98</p> <p>Estimate the difference: 25.1 – 17.02 - 3.25</p> <p>Estimate the product: 3.678 • 5.123 • 2.42</p> <p>Estimate the quotient: 45.358 ÷ 14.789</p>	<p>16.2 + 3.5 + 14.98</p> <p>25.1 – 17.02 - 3.25</p> <p>3.678 • 5.123 • 2.42</p> <p>45.358 ÷ 14.789</p>

Estimating Decimal Operations Worksheet

Estimate to find each sum or difference.

1.
$$\begin{array}{r} 62.90 \\ - 23.17 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 3.81 \\ + 1.2 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 9.25 \\ - 8.75 \\ \hline \end{array}$$

4. $5.002 + 12.345 + 29.987$

5. $7.03 - 4.79$

Estimate to find each product or quotient.

6. $13.89 \overline{)952.78}$

7.
$$\begin{array}{r} 6.87 \\ \times 3.45 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 12.114 \\ \times 8.97 \\ \hline \end{array}$$

9. $24.567 \cdot 3.423$

10. $78.4 \div 23.5$

Problem Solving

11. Myles went on a field trip to the zoo. His mother gave him \$30.00 to spend on his trip. It costs \$4.50 to get in. He spent \$6.75 on lunch, and bought a souvenir for \$11.33. About how much money does Myles have left?

12. Sidni has a rope 2.2 m long. Kayleen has a rope three and a half times as long as Sidni's. About how long is Kayleen's rope?

13. A member of the school track team ran for a total of 170.3 miles in practice over 61.5 days. About how many miles did he average per day?

14. Mrs. Shelow purchased 5 trays of flowers. The total cost was \$54.75. Each tray contained 2 dozen individual plants. After planting all of the flowers, Mrs. Shelow decided she needed an additional 18 plants. If the plants are priced individually, about how much should she expect to pay for the additional flowers?

Check your work!

Step 4. Subtract.

$$\begin{array}{r} 3.20 \\ - 1.23 \\ \hline \end{array}$$

$$\begin{array}{r} 3.\overset{10}{\cancel{2}}0 \\ - 1.23 \\ \hline 7 \end{array}$$

$$\begin{array}{r} \overset{20}{\cancel{3}}.\overset{10}{\cancel{2}}0 \\ - 1.23 \\ \hline 1.97 \end{array}$$

Check

$$\begin{array}{r} 1.97 \\ + 1.23 \\ \hline 3.20 \end{array}$$

Practice Problems	
$5 + 34.09 + 0.6$	$5 + 34.09 + 0.6$
$23.067 + 121.036$	$23.067 + 121.036$
$675.2 + 42$	$675.2 + 42$
$34.987 - 23$	$34.987 - 23$

2.167 – 2.15	2.167 – 2.15
10 - 6.23	10 – 6.23
20 – 7.93	20 – 7.93
HOMEWORK: Complete and show work on a separate sheet of paper!	Solve the following: 1. $2.4 + 5.6009 =$ 2. $16 - 4.789 =$ 3. $5 + 1.2 =$ 4. $10 - 5.4 =$ 5. $1.45 + 6 + 0.0065 =$ 6. $45 - 2.009 - 24.3 =$

Word Problems Using Addition and Subtraction

1. Daniel improved his time running a mile in track from 6.3 minutes to 5.66 minutes. By how much time did he improve?

4. John walked 1.4 miles to work, 0.7 miles to lunch, and 0.8 miles to the store. Cindy ran 3.6 miles for exercise at the local track. Who covered more distance? By how much?

2. John loaned Alexis \$70.28 on Friday, and on Saturday, Alexis thanked him by paying him back \$75. How much extra money did Alexis give to John?

5. Brand A's road bike weighs 22.5 pounds, and brand B's bike weighs 22.15 pounds. Which one is lighter? By how much?

3. Joseph had a credit card balance of \$278.24 at the beginning of the month. He bought some clothes for \$135.30 and a television for \$221.28. At the end of the month, he made a payment of \$350. How much money is needed to pay off his debt completely?

6. At the supermarket, Alberto purchased 2.3 pounds of tomatoes, 1.1 pounds of lettuce, a 0.6 pound cucumber, and 4 pounds of carrots. He also decided to buy 1.2 pounds of bananas. How many pounds of produce did Alberto buy?

7. Karin bought three books for \$8.95 each and two magazines for \$1.49 each. How much did she spend in total?

Multiplying Decimals Exploration

Part 1:

Add.

a) $2.3 + 2.3 + 2.3$

b) $1.7 + 1.7 + 1.7 + 1.7$

c) $1.3 + 1.3 + 1.3 + 1.3 + 1.3$

d) $4.1 + 4.1 + 4.1 + 4.1 + 4.1 + 4.1$

Can you think of another way to compute these problems?

Part 2:

Look for a Pattern.

1. A.

B.

C.

$124.37 \times 10 =$		$14.352 \times 10 =$		$0.658 \times 10 =$	
$124.37 \times 100 =$		$14.352 \times 100 =$		$0.658 \times 100 =$	
$124.37 \times 1000 =$		$14.352 \times 1000 =$		$0.658 \times 1000 =$	

Describe what happens to the decimal point when you multiply by 10, 100, and 1,000.

2. A.

B.


C.

$532 \times 0.1 =$		$3,467 \times 0.1 =$		$72 \times 0.1 =$	
$532 \times 0.01 =$		$3,467 \times 0.01 =$		$72 \times 0.01 =$	
$532 \times 0.001 =$		$3,467 \times 0.001 =$		$72 \times 0.001 =$	

Describe what happens to the decimal when you multiply by 0.1, 0.01, and 0.001.

Two Column Notes for Multiplying Decimals

Multiplying Decimals	
<p>Example</p> <p>12.3 • 4.8</p> <p>Step 1</p> <p>Step 2</p> <p>Step 3</p>	<p>12.3 • 4.8</p> <p>Step 1: Line up the numbers vertically just like multiplying whole numbers.</p> $\begin{array}{r} 12.3 \\ \times 4.8 \\ \hline \end{array}$ <p>Step 2: Multiply the numbers (ignoring the decimals for now).</p> $\begin{array}{r} 12.3 \\ \times 4.8 \\ \hline 984 \\ 4920 \\ \hline 5904.0 \end{array}$ <p>Step 3: Decide where the decimal point should be placed. To do this, count the total number of decimal places in both factors.</p> <p>1st factor: 12.3 has 1 decimal place 2nd factor: 4.8 has 1 decimal place</p>

<p>Step 4</p>	<p><i>Total number of decimal places in both factors: 2</i></p> <p>Step 4: Place the decimal in the product. From the right side of the product, count to the left the total number of decimal places that were in both factors.</p> <p>5 9 0 4 . 0 becomes 5 9 . 0 4 0 or 5 9 . 0 4</p> <p style="text-align: center;">  </p> <p>Final Answer: 59.04</p>
<p>Practice Problems</p>	
<p>0.09 • 0.3</p>	
<p>Max uses 1.6 liters of gasoline each hour mowing lawns. How much gas does he use in 5.8 hours?</p>	

<p>2.6 • 2.1</p>	
<p>0.007 • 0.06</p>	
<p>Apples are on sale for \$0.49 per pound. What is the price for 3.5 pounds of apples?</p>	

Word Problems Using Multiplication

1. I have 80 DVD's and I stack them in one tall column. If each DVD has a height of 0.3 cm, how tall is the stack?

4. I need to buy dog food at the store tonight. If each can cost \$0.68, how much would 12 cans cost?

2. Lily used some cloth to make 4 banners and a tablecloth. She used 1.95 m of cloth for each banner and 1.24 m of cloth for the tablecloth. How many meters of cloth did she use altogether?

5. My sister runs 1.3 miles twice a week. How many miles has my sister run in the past six weeks?

3. Jerry worked 20 hours last week. He made \$7.50 each hour that he worked. What would be Jerry's gross pay (amount earned before taxes taken out)?


Student Activity Sheet- How Many Places?

Solve the following problems using the shortcut you have just learned. Fill in the correct letter for each problem in the corresponding space at the bottom of the page to solve the riddle.

- | | | | |
|------------------------------|-----------|-----------|-----------|
| 1. $2.8 \times 4.5 =$ _____ | M(12.6) | P(0.126) | R(1.26) |
| 2. $0.39 \times 8 =$ _____ | T(4.12) | A(3.12) | R(31.2) |
| 3. $42 \times 6.1 =$ _____ | T (256.2) | R(246.2) | P(156.2) |
| 4. $2.04 \times 0.9 =$ _____ | E(18.36) | H(1.836) | T(1.936) |
| 5. $6.8 \times 2.03 =$ _____ | O(14.804) | C(12.803) | R(13.804) |
| 6. $93 \times 0.8 =$ _____ | U(7.44) | O(74.4) | I(0.744) |
| 7. $3.05 \times 1.9 =$ _____ | C(5.795) | D(5.805) | E(5.695) |
| 8. $6.3 \times 4.2 =$ _____ | P(26.56) | K(26.46) | C(24.46) |
| 9. $0.98 \times 2.3 =$ _____ | D(2.154) | R(22.54) | S(2.254) |
| 10. $2.2 \times 4.4 =$ _____ | ? (9.6) | ! (9.68) | . (9.608) |

1
2
3
4
space
5
6
7
8
9
10

Two Colum Notes for Dividing Decimals

<p>Divisor</p>	<p>The number you are dividing by in a division problem</p> <p>Ex. $12.2 \div \mathbf{0.02} = 610$</p> <p>Also written as: $\mathbf{0.02} \overline{) 12.2}$ $\begin{array}{r} 610 \\ \underline{12.2} \end{array}$</p>
<p>Dividend</p>	<p>The number to be divided in a division problem</p> <p>Ex. $\mathbf{12.2} \div 0.02 = 610$</p> <p>Also written as: $0.02 \overline{) 12.2}$ $\begin{array}{r} 610 \\ \underline{12.2} \end{array}$</p>
<p>Quotient</p>	<p>The result when one number is divided by another—the answer.</p> <p>Ex. $12.2 \div 0.02 = \mathbf{610}$</p> <p>Also written as: $0.02 \overline{) 12.2}$ $\begin{array}{r} \mathbf{610} \\ \underline{12.2} \end{array}$</p>
<p>Example $12.2 \div 0.02 = 610$</p> <p>Step 1</p>	<p>Step 1: Move the decimal in the divisor to the right until it is a whole number</p> <p>$12.2 \div \mathbf{0.02} = 610$</p> <p>Also written as: $\mathbf{0.02} \overline{) 12.2}$ $\begin{array}{r} 610 \\ \underline{12.2} \end{array}$</p> <p>the decimal in 0.02 must move two places to the right in order to become a whole number</p> <p>$\mathbf{0.02}$ becomes $\mathbf{2.0}$</p> 

Step 2


Step 2: Move the decimal in the **dividend** the same # of places to the right

$$12.2 \div 0.02$$

Also written as: $0.02 \overline{) 12.2}$

Since the decimal in the divisor (0.02) moved two places to the right, **12.2** must also move two places to the right

12.2 becomes 1220.0



Step 3

Step 3: Write the new problem.

$$1220 \div 2$$

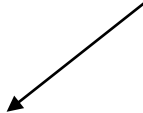
Also written as: $2 \overline{) 1220}$

Step 4

Step 4: Be sure to mark the location of the decimal in the quotient.

$$1220 \div 2$$

Also written as: $2 \overline{) 1220.}$



Step 5

Step 5: Divide as usual.

$$\begin{array}{r}
 610. \\
 2 \overline{) 1220.} \\
 \underline{12} \\
 02 \\
 \underline{2} \\
 00 \\
 \underline{0} \\
 0
 \end{array}$$

Step 6

Step 6: Always check your work.

How to check your work:

Multiply the divisor by the quotient, and then add any remainders.

$$\begin{array}{r}
 610 \\
 \times 2 \\
 \hline
 1220 \\
 + \text{Remainder } 0 \\
 \hline
 1220
 \end{array}$$

✓ You should get the dividend for the answer.

Practice Problems	
$80.2 \div .005$	$80.2 \div .005$
$4.75 \div 2.5$	$4.75 \div 2.5$
$0.012 \div 0.6$	$362.03 \div 1.2$
$0.4 \div 0.008$	$0.4 \div 0.008$

Word Problems Using Division

1. In order to mow the lawn, we need to buy some gasoline for our lawnmower. If we bought 3.5 gallons of gas and paid \$4.55, how much did the gas cost per gallon?

4. There are 5 people on the elevator. Together they weigh 925.98 lbs. Find the average weight to the nearest hundredth.

2. On our trip yesterday we traveled 149.5 miles and took 2.5 hours. Determine our average rate of speed (miles per hour.)

5. Pat's paycheck last week said he made \$107.80 gross and that he worked 12.25 hours. How much does Pat make per hour?

3. Jan had 15.75 yds of material and needed 2.5 yds for each puppet she wanted to make. How many puppets can she make?

6. What was its average speed in miles per hour if a plane flew 1856.4 miles in 5.2 hours?

Word Problems Using Decimal Operations

1. Billie runs daily as part of an exercise plan. On Sunday she ran 8.3 miles, on Monday 5.1 miles, on Tuesday 5.75 miles, on Wednesday 5.6 miles, on Thursday 4.25 miles, and 6 miles on Saturday. How many miles did she run this week?
2. Tom had \$84.50 and then spent \$12.25 for a music CD, \$17.85 for a gift and \$15.45 for gasoline. How much did he have left?
3. The employees in a firm earn \$8.50 an hour for the first 40 hours per week, and 1.5 times the hourly rate for any hours worked over 40. How much does an employee who works 52 hours in one week earn?
4. The monthly rental for an apartment is \$412.50. How much would the rent be for one year?
5. If you have \$325.58 in your checking account and then write a check for \$166.73, what is your new balance?
6. John and Rosie own a home assessed at 98,000. If for every \$1000 of assessed value they must pay \$65.50 in taxes, how much is their tax bill?

7. Jan bought 4 pounds of candy for \$12.25. What was the average cost per pound to the nearest cent?

10. If you are charged \$22.92 for 16.5 gallons of gasoline. What is the price of gasoline per gallon? Round your answer to the nearest tenth of a cent.

8. Mr. Adams drives a school bus twice a day for 5 days a week. Each trip averages 35.8 miles. In one school week, Mr. Adams drives how many miles?

11. In a 220-yard dash, Fred finished in 36.4 seconds and Dick finished in 33.9 seconds. How much longer did it take Fred?

9. A gallon of water weighs about 8.3 pounds. How many gallons of water are there in 614.2 pounds?

12. Find the total cost of this food: 4 lb steak @ \$3.89 per pound, 4 doz. eggs @ \$1.05 per dozen, 2 gallons of milk @ \$1.99 each, and 3 loaves bread @ \$1.79 each.

13. You start a trip when your odometer reads 23,672 miles, and you have a full tank of gas. After driving a few hours, you fill up your tank. If you buy 16.5 gallons and your odometer reads 23,927, how many miles to the gallon are you getting? Round to the nearest tenth of a gallon.

Math Without Computing

3×0.25

$3 \div 0.25$

$0.25 \div 3$

20×0.5

$20 \div 0.5$

$0.5 \div 20$

Each of these problems can be solved by doing one of the computations in the box above. Next to each problem, write the computation needed to solve it.

- 1 A running track is 0.25 mi long. How many laps around the track are necessary to run 3 mi?
- 2 Osgood bought 20 candy bars at \$0.50 each. How much did he pay for the candy bars?
- 3 Bubbles Mirth and two of her friends bought a bottle containing 0.25 L of root beer. If they divide it equally, how much will each person get?
- 4 Each super chocolate kiss weighs 0.5 oz. How many kisses can be made from 20 oz of chocolate?
- 5 Paper Plus is having a sale on school supplies. The discount is 0.25 of the regular price. How much would you save on a \$3 notebook?
- 6 A pack of construction paper is 0.5 cm thick. If there are 20 sheets of paper in the pack, how thick is each sheet?
- 7 Ms. Burger bought a 3-pound package of ground beef. She divided it into 0.25-pound patties. How many patties did she make?
- 8 Three diamonds together weigh 0.25 carat. What is the average weight of the diamonds?
- 9 It took Rolex 20 days to write his dinosaur report. He wrote half a page each day. How long was the report?
- 10 Twenty pounds of cashews are packed into cans. Each can holds half a pound. How many cans are filled?
- 11 What is the cost of 3 pounds of potatoes at 25¢ per pound?
- 12 A scale model of a sailboat is 20 cm long. Each centimeter on the model is 0.5 mi on the actual boat. How long is the actual boat?
- 13 An antelope ran 3 miles in 0.25 hour. What was its average speed in miles per hour?
- 14 A string of outdoor lights is supported by 21 equally-spaced posts. If the distance from the first post to the last post is 0.5 km, how far apart are the posts?
- 15 A window is made using 2 panes of glass separated by an insulating air space. The glass is 0.25 cm thick, and the separation between panes is also 0.25 cm. How thick is the window?
- 16 A math workbook is 0.5 in. thick. How many of these books will fit on a shelf that is 20 in. long?

Permission is given to instructors to reproduce this page for classroom use with Middle School Math with Pizzazz! (Elander B). Copyright © Wig

Unit 3 Study Guide

Solve each problem. Pay attention to the operation rules.

1. $18.75 + 5$

2. $35 - 17.38$

3. $2.35 + (8.45 - 5)$

4. $1.11 \cdot 9$

5. $11.25 \cdot 0.06$

6. $43 \cdot 0.003$

7. $8.8 \div 2$

8. $6.4 \div 2.2$

9. $10 - 3.5 \cdot 2.5$

Calculate the correct answer.

10. $22.34 \cdot 10$ _____

16. $22.34 \div 10$ _____

11. $22.34 \cdot 100$ _____

17. $22.34 \div 100$ _____

12. $22.34 \cdot 1000$ _____

18. $22.34 \div 1000$ _____

13. $22.34 \cdot 0.1$ _____

19. $22.34 \div 0.1$ _____

14. $22.34 \cdot 0.01$ _____

20. $22.34 \div 0.01$ _____

15. $22.34 \cdot 0.001$ _____

21. $22.34 \div 0.001$ _____

Fill in the Blank. Use each answer only ONCE.

Sum	Difference	Product	Compatible Number	Quotient
22.	_____	is the answer to a division problem.		
23.	_____	is the answer to a multiplication problem.		
24.	_____	is the answer to a subtraction problem.		
25.	_____	is the answer to an addition project.		
26.	_____	a number that can divide easily.		

Estimate the following: ****DO NOT SOLVE!****

27. 54.80
 $- \underline{13.27}$

28. 9.114
 $\times \underline{10.97}$

29. $98.4 \div 9.85$

30. $3.602 + 14.345 + 9.987$

Place the decimal point in each answer by estimating.

31. $70.5 \cdot 4.4 = 3 \ 1 \ 0 \ 2$

32. $4.17 \cdot 1.2 = 5 \ 0 \ 0 \ 4$

33. $56 \cdot 3.125 = 1 \ 7 \ 5 \ 0$

34. $1.252 \cdot 7.4 = 9 \ 2 \ 6 \ 4 \ 8$

Problem Solving.

35. Joseph had a credit card balance of \$278.24 at the beginning of the month. He bought some clothes for \$135.30 and a television for \$221.28. At the end of the month, he made a payment of \$350. How much money is needed to pay of his debt completely?

36. Brand A's bike weighs 22.5 pounds, and brand B's bike weighs 22.15 pounds. Which one is lighter? By how much?

37. Max uses 1.6 liters of gasoline each hour mowing lawns. How much gas does he use in 5.8 hours?

38. Jerry worked 20 hours last week. He made \$7.50 each hour that he worked. What would be Jerry's gross pay (amount earned before taxes taken out)?

39. Jasmine's gross pay last week was \$142.38. If Jasmine makes \$8.5 an hour, how many hours did she work?