



# Daily Warm-Ups

# MATH IN REAL LIFE

Brian Pressley

**Level II**

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1 2 3 4 5 6 7 8 9 10

ISBN 978-0-8251-6316-6

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J. Weston Walch, Publisher

40 Walch Drive • Portland, Maine 04103

[www.walch.com](http://www.walch.com)

Printed in the United States of America



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The *Daily Warm-Ups series* is a wonderful way to turn extra classroom minutes into valuable learning time. The 180 quick activities—one for each day of the school year—practice applying a variety of math skills in real-life contexts. The warm-ups include an assortment of problems requiring varying degrees of prior knowledge—from Consumer Math to Algebra, Geometry, and Probability. The problems vary in the level of difficulty and the amount of time it will take students to solve them. Some of the problems are quite challenging, and students will need scientific calculators to solve some of them.

These daily activities may be used at the very beginning of class to get students into learning mode, near the end of class to make good educational use of that transitional time, in the middle of class to shift gears between lessons—or whenever else you have minutes that now go unused.

*Daily Warm-Ups* are easy-to-use reproducibles—simply photocopy the day’s activity and distribute it. Or make a transparency of the activity and project it on the board. You may want to use the activities for extra-credit points or as a check on the math skills that are built and acquired over time. However you choose to use them, *Daily Warm-Ups* are a convenient and useful supplement to your regular lesson plans. Make every minute of your class time count!

## Daily Warm-Ups: Math in Real Life



Daily Warm-Ups: Math in Real Life

## Adding Coins

Many transactions in real life involve the handling of money. The smallest units of money in the United States are the penny, the nickel, the dime, and the quarter. The penny is worth 1 cent, the nickel is worth 5 cents, the dime is worth 10 cents, and the quarter is worth 25 cents. 100 cents is equal to 1 dollar.

Determine the total value of each combination of coins below without using a calculator. Write the value on the line.

1. 1 nickel, 3 pennies, 2 dimes \_\_\_\_\_
2. 2 quarters, 2 dimes, 2 nickels \_\_\_\_\_
3. 5 nickels, 5 dimes, 3 pennies \_\_\_\_\_
4. 1 nickel, 1 penny, 1 quarter, 1 dime \_\_\_\_\_
5. 4 pennies, 12 nickels, 1 dime \_\_\_\_\_
6. 2 quarters, 2 pennies, 3 nickels \_\_\_\_\_



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## Comparing Coins

Coins can be combined in many different ways. A large stack of coins may or may not have more value than a small stack of coins. For example, 50 pennies (50 cents) has less value than a much smaller stack of 11 nickels (55 cents). Sometimes a larger stack of coins does have a greater value than a small stack. For example, 75 pennies (75 cents) is worth more than 7 dimes (70 cents).

Determine which combination of coins below represents the greatest amount of money without using a calculator.



- a. 53 pennies, 1 dime, 1 nickel
- b. 1 quarter, 4 dimes, 1 nickel
- c. 1 quarter, 3 dimes, 9 pennies
- d. 2 quarters, 10 pennies, 1 nickel
- e. 3 quarters
- f. 5 dimes, 4 nickels, 3 pennies





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## Adding Bills

Amounts of money over 100 cents can be handled using bills. Common bills are the one-dollar bill, the five-dollar bill, the ten-dollar bill, the twenty-dollar bill, the fifty-dollar bill, and the hundred-dollar bill. A small stack of bills does not necessarily mean a small amount of money, and a large stack of bills does not necessarily mean a large amount of money.

Determine the total value of each combination of bills below without using a calculator.

1. 1 five, 2 tens, 4 twenties \_\_\_\_\_
2. 2 hundreds, 3 fifties, 6 fives \_\_\_\_\_
3. 55 ones, 3 tens \_\_\_\_\_
4. 8 fives, 1 twenty, 6 ones, 8 hundreds \_\_\_\_\_
5. 12 fifties, 4 ones, 7 twenties, 3 fives \_\_\_\_\_
6. 3 ones, 1 five, 1 ten, 1 twenty, 1 fifty, 1 hundred \_\_\_\_\_



# Comparing Bills

Bills can be combined in many different ways. A large stack of bills may or may not have more value than a small stack of bills. For example, 50 ones (\$50) have less value than a much smaller stack of 11 fives (\$55). Sometimes a larger stack of bills does have a greater value than a small stack. For example, 75 ones (\$75) is worth more than 7 tens (\$70).

Determine which combination of bills below represents the greatest amount of money without using a calculator.



- a. 10 twenties, 10 fives, 20 ones
- b. 40 fives, 1 ten, 20 ones
- c. 2 hundreds, 1 fifty, 4 tens, 2 fives
- d. 24 ones, 11 twenties
- e. 4 fifties, 3 twenties, 18 ones
- f. 100 ones, 2 fifties, 3 tens, 4 fives





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## Adding Coins and Bills

When you make a purchase, the total amount of money you spend is usually a combination of dollars and cents. An amount such as \$10.45 or \$8.55 is more common than a round number such as \$11.00.

Determine the total value of each combination of bills and coins below without using a calculator.

1. 2 hundreds, 3 twenties, 1 ten, 7 nickels, 1 penny \_\_\_\_\_
2. 1 hundred, 8 twenties, 3 fives, 4 ones, 9 dimes, 8 pennies \_\_\_\_\_
3. 2 hundreds, 3 fifties, 52 ones, 1 quarter, 8 dimes, 1 nickel, 1 penny \_\_\_\_\_
4. 3 hundreds, 16 ones, 8 nickels \_\_\_\_\_
5. 4 fifties, 6 twenties, 4 tens, 1 five, 4 ones, 9 quarters \_\_\_\_\_
6. 6 twenties, 3 fives, 10 ones, 2 dimes, 12 nickels \_\_\_\_\_



# Comparing Coins and Bills

The value of an amount of money is not always related to the size of the stack. For instance, 5 hundreds are worth as much as a stack of 50,000 pennies. The 5 hundred-dollar bills would weigh about 0.01 pounds, and the 50,000 pennies would weigh about 275 pounds! The values are the same even though the pennies weigh 27,500 times more than the bills and take up a lot more room.

Determine which combination of bills and coins below represents the greatest amount of money without using a calculator.

- a. 10 twenties, 3 fives, 10 ones, 2 dimes, 2 pennies
- b. 1 hundred, 4 twenties, 3 fives, 4 ones, 9 dimes, 1 penny
- c. 2 hundreds, 3 fifties, 12 ones, 1 quarter, 1 dime, 1 nickel, 1 penny
- d. 2 hundreds, 3 twenties, 1 ten, 3 nickels, 1 penny
- e. 2 hundreds, 16 ones, 8 nickels
- f. 4 fifties, 4 twenties, 1 ten, 1 five, 4 ones, 4 quarters





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## Making Change with Coins

Often when you buy something with coins, you will not have the exact change. Therefore, you will give more than you owe and get change back. It is a good idea to figure out how much money you are owed to make sure you are getting the correct change.

Determine the amount of change you should get back for each of the following purchases without using a calculator.

1. You buy 3 pencils at  $15¢$  each and pay with 2 quarters. \_\_\_\_\_
2. You pay a  $60¢$  toll with  $75¢$ . \_\_\_\_\_
3. You buy a pack of gum for  $59¢$  and pay with 12 nickels. \_\_\_\_\_
4. You buy a bottle of water for  $\$1.29$  and pay with 5 quarters and 1 dime.  
\_\_\_\_\_
5. You buy a bottle of apple juice for  $99¢$  and pay with 3 quarters and 3 dimes. \_\_\_\_\_



# Making Change with Coins and Bills

Often when you buy something with cash, you will not have the exact change. Therefore, you will give more than you owe and get change back. It is a good idea to figure out how much money you are owed to make sure you are getting the correct change.

For each problem below, determine whether or not you received the correct change without using a calculator.

1. You buy popcorn at the movies for \$6.55. You pay with \$10 and get \$2.45 in change. \_\_\_\_\_
2. You give a clerk \$100 for a pair of sneakers that costs \$79.84 and get \$11.16 in change. \_\_\_\_\_
3. You spend \$16.52 on magazines and pay with 2 tens. You get \$3.48 in change. \_\_\_\_\_
4. You buy a meal at a fast-food restaurant for \$7.58. You pay with 1 twenty and get \$13.42 in change. \_\_\_\_\_
5. You buy some DVDs at a flea market for \$64.91. You give 4 twenties and get \$15.09 in change. \_\_\_\_\_



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## Multiplying Money

Sometimes when an item is being sold at a reduced price, it is a good deal to buy many of that item. To find the total cost of your purchase, you can multiply the cost of one item by the number of items you're buying.

For each problem below, determine the total cost.

1. You buy 6 sodas for \$.79 each. \_\_\_\_\_
2. You buy 14 sub sandwiches for \$2.69 each. \_\_\_\_\_
3. You find basketball sneakers on sale for \$42.35 a pair, so you buy 3 pairs.  
\_\_\_\_\_
4. You buy 30 rolls of toilet paper for \$0.52 a roll. \_\_\_\_\_
5. You're making a lot of cookies and buy 12 bags of chocolate chips, which are \$1.89 per bag. \_\_\_\_\_
6. You want to download 34 songs for \$0.99 each. \_\_\_\_\_



# Dividing Money

Sometimes when you buy items in bulk, you save money. But are you always getting the best deal? The best way to know is to calculate the cost per item. For example, if you buy a six-pack of soda for \$1.92, then each can costs 32¢. If you purchase the cans from a vending machine, the cost could be a dollar or more per can. Buying the six-pack of soda is the better deal.

For each item below, determine which choice is the better buy. Circle the correct choice.

1. a six-pack of paper towels for \$6.50 or six rolls for \$1.25 each
2. a 24-can case of soup for \$18 or a 4-can pack of soup for \$3
3. a 12-pack of pencils for \$0.99 or a 50-pack for \$4.50
4. a 500-sheet ream of paper for \$5.99 or a 250-sheet ream for \$3.50
5. a 50-pack of DVD-RWs for \$40 or a 12-pack for \$10.99
6. a whole album download (14 songs) for 9.99 or a single track for 75¢ each



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## Estimating a Bill

When you go to a restaurant with a group of people, you often have to determine who owes what when the bill arrives. Sometimes the bill is split up for you. If it is not, however, how do you determine your fair share? One of the simplest ways is to round each item you bought to the nearest whole dollar and then add them together.

Estimate each person's share of the bill below. Each person has a different seat number next to his or her items. After you make your estimates, find the exact amounts owed.

Seat 1: chicken burger \$6.95

Seat 2: BLT \$4.95

Seat 3: salad special \$5.29

Seat 3: bottled water \$1.49

Seat 1: soda \$1.75

Seat 2: iced tea \$1.55

Seat 1: chicken wings \$3.59

Seat 3: coconut shrimp \$4.59

Seat 2: slice apple pie \$2.59

Seat 3: ice cream sundae \$3.09



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